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THE  
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OF  
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—  
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# Commonwealth of Massachusetts.

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BUREAU OF STATISTICS OF LABOR,  
ROOMS 250-258 STATE HOUSE,  
BOSTON, JUNE 30, 1899.

TO THE HONORABLE SENATE AND HOUSE OF REPRESENTATIVES:

I have the honor to transmit, herewith, the Annual Statistics of Manufactures for the year 1898, which have been collected and are presented in compliance with Chapter 174, Acts of 1886.

Very respectfully,

HORACE G. WADLIN,  
*Chief.*

[W]



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# THE

## ANNUAL STATISTICS OF MANUFACTURES.

### 1898.

#### INTRODUCTION.

This volume is the thirteenth report on the Annual Statistics of Manufactures issued in accordance with the provisions of Chapter 174 of the Acts of 1886.

#### *Number of Returns Compared.*

The following table exhibits the number of returns compared in these annual reports, in each year, beginning with 1886 :

YEARS.		Number of Establish- ments Considered	YEARS.		Number of Establish- ments Considered
1886,	. . . . .	1,027	1893,	. . . . .	4,397
1887,	. . . . .	1,027	1894,	. . . . .	4,093
1888,	. . . . .	1,140	1895,	. . . . .	3,629
1889,	. . . . .	1,364	1896,	. . . . .	4,609
1890,	. . . . .	3,041	1897,	. . . . .	4,695
1891,	. . . . .	3,745	1898,	. . . . .	4,701
1892,	. . . . .	4,473			

The number of establishments compared in 1898 is more than four times the number compared in the first volume of the series. The whole number of returns received in 1898 was 5,313; this number is larger than the number entering into the comparisons with those received in 1897, inasmuch as only such returns may be compared as are derived from the same

establishments in two successive years. Of course, all the returns received in 1898 cannot be compared, for the reason that there are many new establishments which made their first return in 1898, and many of those reporting in 1897 were for some legitimate reason unable to make return in 1898. Nevertheless, the figures may be taken as representative of industrial conditions in the distinctly manufacturing establishments of the State, as distinguished from establishments engaged in repairs or light mechanical and hand work; that is to say, in the factory industries exclusive of what may be termed merely shop industries. In the following table, we present the value of goods made and work done in the 5,313 establishments:

INDUSTRIES.	1898	
	Number of Establishments	Value of Goods Made and Work Done
Agricultural implements, . . . . .	9	\$1,025,675
Arms and ammunition, . . . . .	14	1,971,558
Artisans' tools, . . . . .	76	3,209,490
Awnings, sails, tents, etc., . . . . .	46	633,370
Bicycles, tricycles, etc., . . . . .	26	3,658,686
Boots and shoes, . . . . .	799	117,083,100
Boots and shoes (factory product), . . . . .	521	101,761,220
Soles, heels, and cut stock, . . . . .	226	13,930,751
Boot and shoe findings, . . . . .	33	1,125,685
Stitching, heeling, etc., . . . . .	19	265,444
Boxes, barrels, kegs, etc., . . . . .	130	4,594,008
Boxes (paper), . . . . .	66	2,162,940
Brick, tiles, and sewer pipe, . . . . .	74	1,513,535
Brooms, brushes, and mops, . . . . .	24	1,389,060
Building materials, . . . . .	62	2,882,761
Burial cases, caskets, coffins, etc., . . . . .	7	364,153
Buttons and dress trimmings, . . . . .	15	832,877
Carpetings, . . . . .	13	6,168,672
Textile, . . . . .	8	5,298,216
Other, . . . . .	5	870,456
Carriages and wagons, . . . . .	152	3,973,604
Cement, kaolin, lime, and plaster, . . . . .	9	205,592
Chemical preparations (compounded), . . . . .	16	1,544,553
Clocks and watches, . . . . .	13	2,417,168
Clothing, . . . . .	172	20,815,619
Cooking, lighting, and heating apparatus, . . . . .	48	3,127,271
Cordage and twine, . . . . .	23	4,917,489
Cotton goods, . . . . .	180	89,702,330
Cotton goods (woven), . . . . .	128	73,123,894
Cotton yarn and thread, . . . . .	42	14,561,532
Cotton waste, . . . . .	10	2,016,904
Crayons, pencils, crucibles, etc., . . . . .	4	122,060

INDUSTRIES.	1898	
	Number of Establishments	Value of Goods Made and Work Done
Drugs and medicines, . . . . .	28	\$4,225,618
Dyestuffs, . . . . .	6	564,637
Earthen, plaster, and stone ware, . . . . .	10	240,299
Electrical apparatus and appliances, . . . . .	24	6,530,452
Electroplating, . . . . .	12	165,869
Emery and sand paper and cloth, etc., . . . . .	11	1,147,033
Fancy articles, . . . . .	20	561,566
Fertilizers, . . . . .	7	1,939,023
Fine arts and taxidermy, . . . . .	3	33,583
Fireworks and matches, . . . . .	4	159,012
Flax, hemp, and jute goods, . . . . .	9	3,451,650
Food preparations, . . . . .	400	70,238,716
Furniture, . . . . .	152	11,527,932
Glass, . . . . .	15	326,427
Glue, isinglass, and starch, . . . . .	22	1,333,707
Hair work (animal and human), . . . . .	4	247,350
Hose: rubber, linen, etc., . . . . .	6	1,112,954
Hosiery and knit goods, . . . . .	43	5,183,760
Ink, mucilage, and paste, . . . . .	7	435,467
Ivory, bone, shell, and horn goods, etc., . . . . .	23	1,369,996
Jewelry, . . . . .	97	6,912,377
Leather, . . . . .	111	21,139,996
Leather goods, . . . . .	31	2,794,267
Liquors (bottled) and carbonated beverages, . . . . .	34	1,283,193
Liquors (malt), . . . . .	35	9,962,133
Liquors (distilled), . . . . .	6	877,943
Lumber, . . . . .	31	2,042,967
Machines and machinery, . . . . .	388	30,323,862
Metals and metallic goods, . . . . .	438	25,205,376
Models, lasts, and patterns, . . . . .	50	1,147,264
Musical instruments and materials, . . . . .	68	5,479,920
Oils and illuminating fluids, . . . . .	10	1,168,964
Paints, colors, and crude chemicals, . . . . .	30	1,674,782
Paper, . . . . .	85	20,517,825
Paper goods, . . . . .	41	5,759,853
Perfumes, toilet articles, etc., . . . . .	7	194,736
Photographs and photographic materials, . . . . .	24	613,494
Pollishes and dressing, . . . . .	32	1,524,485
Printing, publishing, and bookbinding, . . . . .	64	8,729,069
Print works, dye works, and bleacheries, . . . . .	53	20,944,167
Railroad construction and equipment, . . . . .	17	3,171,003
Rubber and elastic goods, . . . . .	53	24,300,515
Saddlery and harness, . . . . .	38	1,115,329
Scientific instruments and appliances, . . . . .	22	1,940,960
Shipbuilding, . . . . .	55	1,586,174
Silk and silk goods, . . . . .	13	4,629,757
Sporting and athletic goods, . . . . .	8	463,278
Stone, . . . . .	216	5,070,096
Quarried, . . . . .	56	1,875,449
Cut and monumental, . . . . .	160	3,194,647

INDUSTRIES.	1898	
	Number of Establishments	Value of Goods Made and Work Done
Straw and palm leaf goods, . . . . .	19	\$4,612,071
Tallow, candles, soap, and grease, . . . . .	70	3,698,630
Tobacco, snuff, and cigars, . . . . .	80	3,960,637
Toys and games (children's), . . . . .	11	653,503
Trunks and valises, . . . . .	7	116,110
Whips, lashes, and stocks, . . . . .	14	1,188,972
Wooden goods, . . . . .	82	2,319,433
Woollen goods, . . . . .	153	33,734,793
Woven goods and yarn, . . . . .	137	33,015,451
Shoddy, waste, etc., . . . . .	16	719,342
Worsted goods, . . . . .	36	25,926,280
ALL INDUSTRIES, . . . . .	5,313	\$671,899,931

From the final line of the preceding table, it is seen that the 5,313 establishments returned an aggregate value of product of \$671,899,931. By reference to page 23 of this report, the value of product in 4,701 establishments is found to be \$640,-871,843. Thus it is seen that returns were received from 612 establishments which for some good reason were not comparable with those returning in 1897, and these 612 establishments produced goods to the value of \$31,028,088.

In this volume, the returns are compared of 4,701 establishments each of which made return for both of the years 1897 and 1898. The purpose of this report and of preceding annual reports is to show the condition of the manufacturing and mechanical industries of the Commonwealth in each year, and to compare each succeeding year with the one preceding. The experience of this Department has shown that comparisons between the returns made in two successive years by a considerable number of representative establishments, afford trustworthy data for determining the growth and condition of our industries in the intercensal years, although the number of establishments making return may be less than the entire number in the State, or less than the number that might properly be included in the Decennial Census, either State or National. The figures which support this conclusion have been presented in previous reports and need not be repeated here.

*Value of Output. 1895-1898.*

In the following table, we show the aggregate value of goods made and work done for the nine leading industries and for All Industries drawn from the report on the Decennial Census of 1895, and place in comparison therewith an estimated value of goods made and work done for 1896, 1897, and 1898, based upon the percentages of increase or decrease shown in the annual reports for these years :

INDUSTRIES.	VALUE OF GOODS MADE AND WORK DONE			
	1895	1896	1897	1898
Boots and shoes, . . . . .	\$122,135,081	\$119,423,682	\$127,317,587	\$131,162,578
Carpetings, . . . . .	7,447,115	5,857,901	6,274,984	5,932,370
Cotton goods, . . . . .	93,615,560	91,031,771	90,877,017	90,986,069
Leather, . . . . .	25,694,407	21,860,801	25,472,205	25,907,780
Machines and machinery, . . . .	33,492,848	36,661,271	32,412,230	34,797,770
Metals and metallic goods, . . .	40,297,899	38,633,596	37,609,806	40,426,780
Paper and paper goods, . . . .	27,955,024	25,738,191	25,825,701	28,635,537
Woollen goods, . . . . .	29,370,963	23,194,249	28,429,191	30,359,533
Worsted goods, . . . . .	20,975,996	18,152,627	24,547,797	25,664,722
ALL INDUSTRIES, . . . . .	\$849,807,302	\$802,982,920	\$827,393,601	\$865,619,185

The values of goods made and work done, as shown in the first column of the above table, are taken from the Census returns of 1895, and cover all the establishments engaged in manufacturing or mechanical industries in that year. In 1896, 1897, and 1898, the figures are estimates based upon the percentages of increase or decrease as shown by the annual reports, which, as stated, are derived from a considerable number of typical establishments making returns in each of the comparative years 1895-1896, 1896-1897, and 1897-1898.

For example, we find in the Eleventh Report\* that in comparing 1896 with 1895 a decrease of 2.76 per cent is shown in the 169 establishments classed under the head of "Cotton Goods." Assuming that this rate of decrease is applicable to the entire industry we reduce the value of product as shown in the Census to this extent and secure the figure \$91,031,771 as the estimated output of *all* establishments in this industry for the year 1896.

\* See page 22, Annual Statistics of Manufactures, 1896.

In the Twelfth Report,\* 163 establishments being comparable between 1896 and 1897, a decrease of 0.17 per cent is shown; reducing the estimated product for 1896 to this extent we obtain the figure \$90,877,017 as the estimated output in 1897 of *all* the establishments in this industry. Turning now to page 22 of the present volume, we find that in 1898 as compared with 1897 an increase of 0.12 per cent is shown; we therefore increase the product value as estimated for 1897 (\$90,877,017) by 0.12 per cent and have as a result \$90,986,-069, this being the estimated value of goods made in this industry in *all* establishments, based upon the returns of 169 representative establishments.

Special and successful efforts were made this year to secure returns of product from every establishment which could be properly classified under the general head of "The Textile Industries." For Cotton Goods, 180 establishments made report, the aggregate product value turned out in which amounted to \$89,702,330, a variation from the estimated figure of 1898 as given on page xxi of only 1.31 per cent. This, of course, is a very small variation as compared with the aggregate amount involved, and demonstrates the representative character of the annual returns.

It is gratifying to note a considerable increase in the estimated output in the manufacturing industries of the State in 1898 as compared with 1897. In 1897 increase was shown over 1896, but the estimated output of All Industries for that year still fell below the figures for the Census year 1895. The estimate for 1898, however, rises above the returns of the Census year, although it is still below the amount shown by the United States Census for the year 1890.

In the publication of the Census report of 1895, we called attention to the fact that the aggregate output of \$888,160,403, shown in 1890, was the result of an extraordinary ratio of gain during the last five years of the preceding decade.† In 1885, the total output, as disclosed by the Decennial Census, was \$674,634,269. The data afforded by the Annual Statistics of Manufactures showed the following percentages of increase in subsequent years up to 1890: In 1886 as compared with 1885,

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\* See page 22, Annual Statistics of Manufactures, 1897.

† Census of Massachusetts, 1895, Vol. V., page xiv.

15 per cent; in 1887 as compared with 1886, five per cent; in 1888 as compared with 1887, three per cent; in 1889 as compared with 1888, two per cent; in 1890 as compared with 1889, four per cent. In computing these annual percentages of increase fractional percentages have been disregarded.

The results of the United States Census of 1890 showed a net gain for five years of about 31 per cent,\* or practically the same as was shown by the estimates from year to year made from the Annual Statistics of Manufactures. In 1891 as compared with 1890 the Annual Statistics indicated a gain of about one per cent, and in 1892 as compared with 1891, a gain of about five per cent, the figures for that year reaching high-water mark in the history of the State. The effect of the general industrial depression was then felt, and in 1893 as compared with 1892 we find a loss of about eight per cent, and in 1894 as compared with 1893, a loss of about 10 per cent. Partial recovery in 1895 gave for that year a gain of about nine per cent as compared with 1894. The results of the Census of 1895 showed an aggregate output of \$849,807,302, the percentage of loss, both by the Annual Statistics of Manufactures and by the Census of 1895, as compared with 1890, being about four per cent.†

We now find from the estimates given in the table on page xxi that in 1896 as compared with 1895 there was a loss of nearly six per cent, but that in subsequent years there has been a continuous gain, amounting in 1897 as compared with 1896 to slightly more than three per cent, and in 1898 as compared with 1897 to nearly five per cent. It is apparent, therefore, that the severity of the depression has been overcome, and that we are now rapidly returning to the position which existed prior to 1893. The results of the Census taken next year will probably show a still larger output.

#### *New Establishments.*

With respect to the consideration of new establishments from year to year it should be explained that if, for example, an establishment began operations on the first of January, 1898, and

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\* The exact figures according to the United States Census are 31.65, and according to the Annual Statistics of Manufactures, 31.93.

† The exact percentage of decrease by the Census was 4.32, and by the Annual Statistics of Manufactures, 4.29.



made a return at the close of the first fiscal year, it would not be possible to use the report in the comparison for that year which would necessarily be made with 1897. But, if the mill continues in operation and makes return in 1899 it enters into the comparisons made in the report for that year. This method was adopted in 1886 and has been followed without change in each succeeding year since that time. These new establishments, if continuously in operation for two years, are represented in the reports. By reference to the table on pages xviii to xx it will be noted that there are 612 establishments (the difference between 4,701 and 5,313) for which a possible comparison may be obtained next year (1899). Many of these are, of course, new and will simply take the place of 410 other establishments which since 1897 have either given up manufacturing or suspended operations indefinitely. In this way the number of representative establishments in the State is kept at a normal figure of about 5,000.

Under the sub-title of "The Textile Industries," pages 213 to 264, we present complete returns of all establishments in the State which in 1898 were engaged in manufacturing textile goods of any kind, and on pages 233 to 236 full explanations of the reasons for the increase or decrease shown in the number of establishments in 1898 as compared with 1895 are given, from which it will be seen that new establishments find their place in due order. In the presentations on pages 22 and 23, identical establishments making return in 1897 and 1898 are compared, and it will be noted that the number in some of the industries for 1898 varies from the number shown for that year on page 232. The figures are brought together in the following table:

INDUSTRIES.	NUMBER OF ESTABLISHMENTS	
	Pages 22 and 23	Page 232
Carpetings (textile), . . . . .	8	8
Cordage and twine, . . . . .	23	23
Cotton goods (in the aggregate), . . . . .	169	180
Flax, hemp, and jute goods, . . . . .	8	9
Hosiery and knit goods, . . . . .	38	43
Print works, dye works, and bleacheries, . . . . .	49	35
Silk and silk goods, . . . . .	11	13
Woollen goods (in the aggregate), . . . . .	142	153
Worsted goods, . . . . .	35	36

The same number of establishments is shown in both comparisons for Carpetings (Textile) and for Cordage and Twine. A larger number is shown for each of the other industries except Print Works, Dye Works, and Bleacheries. The decrease in the last named industry is due to the fact that in the comparison on pages 22 and 23, 14 establishments are included in which custom work, such as dyeing clothing, etc., was carried on. The increases in the other industries, as already stated, are mainly owing to the special effort that has this year been made to secure a complete canvass of the textile industries, and also to the fact that several new mills were started in 1898 and were therefore not comparable with reports for 1897.

It may be of interest in this connection to note the value of goods made and work done in the establishments shown in the preceding table. The figures are brought forward below :

INDUSTRIES.	VALUE OF GOODS MADE AND WORK DONE	
	Pages 22 and 23	Page 236
Carpetings (textile), . . . . .	\$5,298,216	\$5,298,216
Cordage and twine, . . . . .	4,917,489	4,917,489
Cotton goods (in the aggregate), . . . . .	88,374,733	89,702,330
Flax, hemp, and jute goods, . . . . .	1,544,650	3,451,650
Hosiery and knit goods, . . . . .	4,933,724	5,183,760
Print works, dye works, and bleacheries, . . . . .	20,664,979	20,581,893
Silk and silk goods, . . . . .	4,616,267	4,629,767
Woollen goods (in the aggregate), . . . . .	31,633,903	33,734,793
Worsted goods, . . . . .	25,818,780	25,926,280

The addition of 11 establishments in Cotton Goods increases the value of product only \$1,327,597, an amount not sufficient to affect the total estimated output as given on page xxi.

### *Changes in Industry Classification.*

In order that the statistics published in these annual reports may be of the greatest value to manufacturers, this Department will gladly receive any suggestions that may be made in connection with its work, and in response to some already offered, certain changes have been made this year some of which are noted below :

*Boots and Shoes.* This classification has been sub-divided so as to show separately the factory product ; the establishments

making soles, heels, and cut stock ; those making findings ; and those engaged in stitching, heeling, etc., in which the stock used is of minor importance and where the greatest expense is in labor.

*Boxes, etc.* In 1895, this industry was termed "Boxes (Paper and Wooden)." Acting upon the suggestion that the combination of boxes, barrels, and other packages would be a better classification, the industry head was changed in 1897 to Boxes, Barrels, Kegs, etc. ; and paper boxes were included with Paper Goods (the latter being withdrawn from the industry "Paper and Paper Goods") and the new line termed "Boxes (Paper) and Paper Goods." Since then, further division has been made and paper boxes and paper goods are now presented as separate industries. In several instances, the makers of paper boxes are also manufacturers of wooden boxes and *vice versa* ; in such cases, classification by preponderance of product has been made ; that is, if a manufacturer makes more wooden boxes (in value) than paper boxes his establishment is classed under the head of Boxes, Barrels, Kegs, etc. ; if he makes more paper than wooden boxes his establishment is classified under Boxes (Paper).

*Carpetings.* This industry classification has been divided so as to show the establishments making textile carpetings from those making carpetings of other materials, such as oil-cloth, etc.

*Cotton Goods.* This industry now shows the establishments which manufacture woven goods, those making yarn and thread, and those which take waste, etc. from other mills and clean and re-manufacture it.

*Jewelry.* This industry has been withdrawn from the former industry classification of Clocks, Watches, and Jewelry, and is now presented by itself.

*Leather.* In former years this industry classification included not only the leather manufactured but the establishments which were engaged in manufacturing leather goods ; the latter are now shown separately under the industry head of Leather Goods.

*Liquors: Malt, Distilled, and Fermented.* This industry classification together with that of "Liquors and Beverages (Not Spirituous)" has been revised and now includes, under

the head of Liquors (Bottled) and Carbonated Beverages, those establishments which manufacture carbonated beverages and tonics, and also bottle liquors which are purchased in bulk. The establishments making ale, porter, and beer are also presented separately from those which manufacture rum, gin, etc.

*Stone.* This industry has been divided so as to show those establishments which operate quarries as distinct from those which purchase the rough stock and work it into merchantable shape.

*Woollen Goods.* Establishments formerly classified under this general industry head are now divided so as to show those manufacturing woven goods and yarn from those which manufacture shoddy, waste, etc.

Other changes will be made when necessary so as to secure a more nearly perfect system of classification and, as before stated, all suggestions will be given respectful consideration.

#### *The Textile Industries.*

Attention is called to the monograph in this report entitled "The Textile Industries," on pages 213 to 264. It is not intended to be an exhaustive history of the industries but to present as briefly as possible a clear resumé of events so far as they relate to Massachusetts. If additional or more detailed historical facts are desired, the various references in foot-notes will serve as an index to sources of information. In the report for 1899 we shall consider one of the other industries in a similar manner.

I wish again to record my acknowledgment of the valuable and efficient services of Mr. Frank H. Drown, Second Clerk of the Bureau, who, in direct charge of the office division of Manufactures, has been entrusted with the preparation of this volume; and also to thank Mr. Charles F. Pidgin for his constant assistance as heretofore in the general executive work of the office.

H. G. W.



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# STATISTICS OF MANUFACTURES.

1898.

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**PRIVATE FIRMS AND CORPORATIONS;  
PARTNERS AND STOCKHOLDERS:  
BY INDUSTRIES.**

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# PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCKHOLDERS: BY INDUSTRIES.

1898.

[This presentation shows the number of partners and stockholders engaged in the man-  
1898. The partners are divided into males, females, special, and estates. The stockholders  
presentation aggregates of partners and stockholders are given. There are duplications  
duplications are indicated by an asterisk (\*) following the title of the industry (see Boots  
gaged in manufacturing in two or more establishments located in the same town; some-  
in the same town or in different towns. The plan adopted has been to consider each estab-  
whole number of partners and stockholders to each industry, but, in making up the total  
which are operated by railroad companies, or by syndicates or associations, many of which  
presentation; since to include all the stockholders of a railroad company, or of a syndicate  
only to the main business of the corporation, would result in abnormally increasing the

	INDUSTRIES.	Number of Estab- lishments Considered	Number of Private Firms	PARTNERS	
				Males	Females
1	Agricultural implements, . . . . .	9	4	5	-
2	Arms and ammunition, . . . . .	14	9	12	1
3	Artisans' tools, . . . . .	73	54	76	1
4	Awnings, sails, tents, etc., . . . . .	42	42	53	1
5	Bicycles, tricycles, etc., . . . . .	18	5	7	-
6	Boots and shoes,* . . . . .	644	572	928	13
7	Boots and shoes (factory product),* . . . . .	490	368	681	10
8	Soles, heels, and cut stock, . . . . .	183	173	253	3
9	Boot and shoe findings, . . . . .	18	18	27	-
10	Stitching, heeling, etc., . . . . .	13	13	17	-
11	Boxes, barrels, kegs, etc.,* . . . . .	123	110	151	7
12	Boxes (paper), . . . . .	62	54	75	3
13	Brick, tiles, and sewer pipe, . . . . .	56	45	71	3
14	Brooms, brushes, and mops, . . . . .	23	19	25	-
15	Building materials, . . . . .	57	44	62	2
16	Burial cases, caskets, coffins, etc., . . . . .	6	5	10	-
17	Buttons and dress trimmings,* . . . . .	13	4	8	1
18	Carpetings, . . . . .	12	4	6	-
19	Textile, . . . . .	8	2	3	-
20	Other, . . . . .	4	2	3	-
21	Carriages and wagons, . . . . .	136	126	181	-
22	Cement, kaolin, lime, and plaster, . . . . .	9	7	13	-
23	Chemical preparations (compounded), . . . . .	15	9	11	1
24	Clocks and watches, . . . . .	12	10	16	-
25	Clothing, . . . . .	152	124	220	3
26	Cooking, lighting, and heating apparatus, . . . . .	43	24	29	1
27	Cordage and twine, . . . . .	23	14	19	2
28	Cotton goods,* . . . . .	169	84	52	6
29	Cotton goods (woven),* . . . . .	120	17	27	4
30	Cotton yarn and thread,* . . . . .	41	12	17	2
31	Cotton waste,* . . . . .	8	5	8	-
32	Crayons, pencils, crucibles, etc., . . . . .	3	2	3	-
33	Drugs and medicines, . . . . .	25	14	18	1
34	Dyestuffs, . . . . .	6	4	7	-
35	Earthen, plaster, and stone ware, . . . . .	6	6	7	-
36	Electrical apparatus and appliances, . . . . .	21	7	9	-
37	Electroplating, . . . . .	11	11	14	-
38	Emery and sand paper and cloth, etc., . . . . .	10	1	1	-
39	Fancy articles, etc., . . . . .	19	15	20	-
40	Fertilizers, . . . . .	6	3	4	-

# PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCKHOLDERS: BY INDUSTRIES.

1898.

agement of the 4,701 establishments which enter into the comparison for the years 1897 and are designated as males, females, and banks, trustees, etc.; while in the last column of the in the columns devoted to private firms, partners, corporations, and stockholders. These and Shoes). They are caused by the fact that the same firm or corporation is often en- times in the same industry in different towns; and sometimes in more than one industry lishment as one (whether managed in connection with another or not), and to credit the for "All Industries," to omit the duplications. Stockholders of certain establishments have extensive investments of capital outside this Commonwealth, are not included in the or similar association, in connection with such merely branch establishments, incidental aggregate.]

PARTNERS			Number of Corpora- tions	STOCKHOLDERS				AGGREGATES: Partners and Stockholders	
Special	Estates	Totals		Males	Females	Banks, Trustees, etc.	Totals		
-	-	5	5	45	24	13	82	87	1
-	1	14	5	98	44	7	144	158	2
-	2	79	19	486	289	100	875	964	3
-	1	55	-	-	-	-	-	55	4
-	-	7	13	214	47	87	298	305	5
9	6	956	72	650	158	30	838	1,794	6
8	4	653	62	460	55	11	526	1,179	7
1	2	259	10	190	103	19	312	571	8
-	-	27	-	-	-	-	-	27	9
-	-	17	-	-	-	-	-	17	10
-	1	159	12	60	9	16	85	244	11
1	1	80	8	41	6	1	48	128	12
-	2	76	11	172	91	32	296	371	13
-	1	26	4	27	22	5	54	80	14
-	1	65	13	115	20	4	139	204	15
-	-	10	1	25	10	8	43	53	16
-	-	9	9	68	18	8	94	103	17
-	-	6	8	421	379	178	978	984	18
-	-	3	6	397	353	170	920	923	19
-	-	3	2	24	26	8	58	61	20
1	5	187	10	48	17	6	71	258	21
-	-	13	2	9	-	-	9	22	22
-	-	12	6	77	19	6	102	114	23
-	-	16	2	232	196	45	473	489	24
2	1	226	28	342	155	26	523	749	25
1	2	83	19	175	63	18	256	289	26
2	1	24	9	327	232	17	576	600	27
-	3	61	135	10,176	8,669	3,289	22,134	22,195	28
-	1	32	103	8,799	7,860	2,907	19,566	19,598	29
-	2	21	29	1,362	808	381	2,551	2,572	30
-	-	8	3	15	1	1	17	25	31
-	-	3	1	10	2	-	12	15	32
-	2	21	11	81	35	3	119	140	33
-	-	7	2	40	10	5	55	62	34
-	-	7	-	-	-	-	-	7	35
-	-	9	14	365	81	20	466	475	36
-	-	14	-	-	-	-	-	14	37
-	-	1	9	91	28	7	126	127	38
-	-	20	4	30	7	-	37	57	39
-	-	4	3	239	82	1	322	326	40

## PRIVATE FIRMS, PARTNERS, ETC.: BY INDUSTRIES — 1898

— Concluded.

	INDUSTRIES.	Number of Estab- lishments Considered	Number of Private Firms	PARTNERS	
				Males	Females
1	Fine arts and taxidermy, . . . . .	3	2	3	-
2	Fireworks and matches,* . . . . .	4	2	4	-
3	Flax, hemp, and jute goods, . . . . .	8	2	4	-
4	Food preparations,* . . . . .	347	296	884	10
5	Furniture,* . . . . .	135	112	170	6
6	Glass, . . . . .	13	11	17	1
7	Glue, isinglass, and starch, . . . . .	22	14	26	1
8	Hair work (animal and human), . . . . .	4	4	3	1
9	Hose: rubber, linen, etc., . . . . .	6	4	5	-
10	Hosiery and knit goods,* . . . . .	88	19	26	1
11	Ink, mucilage, and paste, . . . . .	7	6	8	-
12	Ivory, bone, shell, and horn goods, etc., . . . . .	19	18	29	-
13	Jewelry, . . . . .	98	84	152	10
14	Leather,* . . . . .	95	83	144	-
15	Leather goods,* . . . . .	30	19	30	-
16	Liquors (bottled) and carbonated beverages, . . . . .	29	24	38	2
17	Liquors (malt), . . . . .	31	5	9	5
18	Liquors (disilled), . . . . .	6	6	10	-
19	Lumber,* . . . . .	29	24	31	4
20	Machines and machinery,* . . . . .	359	296	349	10
21	Metals and metallic goods,* . . . . .	380	268	371	9
22	Models, lasts, and patterns,* . . . . .	42	38	61	2
23	Musical instruments and materials, . . . . .	64	39	58	2
24	Oils and illuminating fluids, . . . . .	8	6	7	-
25	Paints, colors, and crude chemicals, . . . . .	29	20	37	-
26	Paper,* . . . . .	80	20	42	-
27	Paper goods,* . . . . .	34	12	20	-
28	Perfumes, toilet articles, etc., . . . . .	5	3	3	-
29	Photographs and photographic materials, . . . . .	24	21	24	2
30	Polishes and dressing, . . . . .	26	21	35	-
31	Printing, publishing, and bookbinding, . . . . .	62	39	71	3
32	Print works, dye works, and bleacheries,* . . . . .	49	30	88	3
33	Railroad construction and equipment,* . . . . .	16	3	3	-
34	Rubber and elastic goods,* . . . . .	47	20	33	1
35	Saddlery and harness, . . . . .	35	33	36	-
36	Scientific instruments and appliances, . . . . .	20	15	22	-
37	Shipbuilding, . . . . .	46	41	53	-
38	Silk and silk goods, . . . . .	11	4	6	-
39	Sporting and athletic goods, . . . . .	5	4	5	-
40	Stone,* . . . . .	196	177	258	8
41	Quarried,* . . . . .	51	37	53	2
42	Cut and monumental,* . . . . .	145	140	206	6
43	Straw and palm leaf goods, . . . . .	17	14	30	-
44	Tallow, candles, soap, and grease, . . . . .	66	56	78	-
45	Tobacco, snuff, and cigars, . . . . .	63	58	75	8
46	Toys and games (children's), . . . . .	10	7	13	2
47	Trunks and valises, . . . . .	7	7	10	-
48	Whips, lashes, and stocks, . . . . .	14	9	13	2
49	Wooden goods,* . . . . .	73	59	77	1
50	Woollen goods,* . . . . .	142	91	133	5
51	Woven goods and yarn,* . . . . .	126	76	118	5
52	Shoddy, waste, etc., . . . . .	16	15	15	-
53	Worsted goods,* . . . . .	35	16	32	1
54	ALL INDUSTRIES, . . . . .	4,701	3,464	5,170	139

PRIVATE FIRMS, PARTNERS, ETC.: BY INDUSTRIES—1898  
— Concluded.

PARTNERS			Number of Corpora- tions	STOCKHOLDERS				AGGREGATES: Partners and Stockholders
Special	Estates	Totals		Males	Females	Banks, Trustees, etc.	Totals	
-	-	3	1	7	1	-	8	11
-	-	4	12	4	-	-	4	8
-	-	4	6	36	26	6	68	72
1	8	403	51	623	146	39	807	1,210
1	3	180	23	555	160	50	765	945
-	-	18	2	35	10	1	46	64
-	-	27	8	191	38	12	239	266
-	-	4	-	-	-	-	-	4
-	-	5	2	99	57	6	162	167
1	-	28	19	501	354	255	1,110	1,138
-	-	8	1	4	-	-	4	12
-	-	29	1	8	-	-	8	37
2	-	164	9	82	5	-	37	201
3	-	147	12	51	4	-	55	202
3	-	33	11	178	73	13	264	297
-	-	35	5	56	9	6	71	106
-	-	14	26	1,115	112	8	1,235	1,349
-	-	10	-	-	-	-	-	10
-	3	38	5	101	58	9	168	201
-	9	368	123	2,535	1,298	335	4,168	4,531
3	7	390	113	1,198	531	177	1,906	2,296
-	-	63	4	28	25	-	53	116
1	1	62	25	209	77	22	308	370
-	-	7	2	10	3	2	15	22
-	-	37	9	70	23	3	95	132
-	2	44	60	743	401	121	1,265	1,809
-	-	20	22	355	151	16	522	542
-	-	3	2	7	1	-	8	11
-	-	26	3	18	6	-	19	45
-	1	36	5	35	7	1	43	79
-	3	77	23	253	36	9	298	375
-	2	43	19	623	494	439	1,556	1,599
-	-	3	13	90	9	5	104	107
-	2	36	27	498	365	84	947	983
-	-	36	2	14	7	-	21	37
-	-	22	5	61	15	1	77	99
-	1	54	5	113	20	8	141	195
-	-	6	7	123	51	13	187	198
-	-	5	1	4	-	-	4	9
-	5	271	19	313	143	27	483	754
-	3	58	14	239	143	27	459	517
-	3	213	5	24	-	-	24	237
1	-	31	3	13	5	2	20	51
1	-	79	10	96	52	31	179	258
1	-	79	10	53	7	1	61	140
-	-	15	3	23	-	-	23	38
-	-	10	-	-	-	-	-	10
-	-	15	5	148	65	13	226	241
-	2	30	14	174	56	9	239	319
1	4	143	51	686	624	322	1,632	1,775
1	2	126	50	680	624	322	1,626	1,752
-	2	17	1	6	-	-	6	23
-	-	33	19	392	182	122	696	729
34	81	5,424	1,172	25,322	15,456	5,549	46,327	52,251

1 Includes one syndicate. 2 Includes eight syndicates. 3 Includes three syndicates.

4 Includes four syndicates.

5 Includes six syndicates.

6 Includes 10 railroad corporations.

7 Includes two syndicates.

8 Includes 14 syndicates and three railroad corporations.



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**CAPITAL INVESTED:**  
**BY INDUSTRIES.**

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[ 13 ]

## CAPITAL INVESTED: BY INDUSTRIES.

1897, 1898.

[In this presentation, the figures given under "Amount of Capital Invested" represent the returns made by the same establishments, in each industry, for the years 1897 and 1898, the whole number of establishments considered in "All Industries" being 4,701. Comparison is made, as regards the amount of capital invested, between these two years. The relative increase or decrease in 1898 as compared with 1897 is given with its equivalent percentage.]

INDUSTRIES.	Number of Establishments Considered	AMOUNT OF CAPITAL INVESTED		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Amounts	Percentages
Agricultural implements, . . . . .	9	\$969,241	\$1,003,806	+ \$34,565	+ 3.57
Arms and ammunition, . . . . .	14	1,700,434	1,830,835	+130,401	+7.67
Artisans' tools, . . . . .	73	2,860,508	2,969,305	+108,797	+3.80
Awning, sails, tents, etc., . . . . .	42	144,194	141,683	-2,511	-1.74
Bicycles, tricycles, etc., . . . . .	18	3,063,226	2,841,137	-222,089	-7.25
Boots and shoes, . . . . .	644	23,200,058	22,414,655	-785,393	-3.39
Boots and shoes (factory product), . . . . .	430	20,340,171	19,703,946	-636,225	-3.13
Soles, heels, and cut stock, . . . . .	183	2,563,182	2,398,620	-164,512	-6.42
Boot and shoe findings, . . . . .	18	251,680	274,176	+22,496	+8.94
Stitching, heelings, etc., . . . . .	13	45,075	37,923	-7,152	-15.87
Boxes, barrels, kegs, etc., . . . . .	122	2,402,118	2,368,954	-33,164	-1.38
Boxes (paper), . . . . .	62	922,931	927,092	+4,161	+0.45
Brick, tiles, and sewer pipe, . . . . .	56	2,002,536	1,827,946	-174,590	-8.72
Brooms, brushes, and mops, . . . . .	23	555,231	610,618	+55,387	+9.98
Building materials, . . . . .	57	1,494,806	1,484,487	-10,318	-0.69
Burial cases, caskets, coffins, etc., . . . . .	6	174,149	174,797	+648	+0.37
Buttons and dress trimmings, . . . . .	13	712,613	721,446	+8,833	+1.25
Carpets, . . . . .	12	6,784,921	6,582,652	-202,269	-2.98
Textile, . . . . .	8	6,525,133	6,249,070	-276,063	-4.23
Other, . . . . .	4	259,788	333,582	+73,794	+28.41
Carriages and wagons, . . . . .	136	2,193,192	2,130,968	-62,224	-2.84
Cement, kaolin, lime, and plaster, . . . . .	9	105,735	104,285	-1,450	-1.37
Chemical preparations (compound- ed), . . . . .	15	1,658,213	1,668,440	+10,227	+0.62
Clocks and watches, . . . . .	12	4,276,889	4,565,577	+288,688	+6.75
Clothing, . . . . .	152	5,176,587	5,067,311	-109,276	-2.11
Cooking, lighting, and heating ap- paratus, . . . . .	43	1,356,367	1,378,218	+21,851	+1.61
Cordage and twine, . . . . .	23	2,713,603	2,440,039	-273,564	-10.08
Cotton goods, . . . . .	169	113,437,432	112,702,330	-735,102	-0.65
Cotton goods (woven), . . . . .	120	96,528,780	94,987,584	-1,541,196	-1.60
Cotton yarn and thread, . . . . .	41	16,270,780	17,065,135	+794,355	+4.88
Cotton waste, . . . . .	8	637,872	649,611	+11,739	+1.84
Crayons, pencils, crucibles, etc., . . . . .	3	47,431	68,612	+21,181	+44.66
Drugs and medicines, . . . . .	25	1,022,945	995,886	-27,059	-2.65
Dyestuffs, . . . . .	6	584,366	563,597	-20,769	-3.55
Earthen, plaster, and stone ware, . . . . .	6	203,199	197,410	-5,789	-2.85
Electrical apparatus and appliances, . . . . .	21	3,234,025	3,495,297	+261,272	+8.08
Electroplating, . . . . .	11	65,387	61,688	-16,301	-24.93
Emery and sand paper and cloth, etc., . . . . .	10	592,809	625,945	+33,136	+5.59
Fancy articles, etc., . . . . .	19	190,991	185,400	-5,591	-2.93
Fertilizers, . . . . .	6	805,933	830,419	+24,486	+3.04
Fine arts and taxidermy, . . . . .	3	24,740	31,247	+6,507	+26.30
Fireworks and matches, . . . . .	4	122,356	47,776	-74,580	-60.95
Flax, hemp, and jute goods, . . . . .	4	1,842,661	1,831,525	-11,136	-0.60
Food preparations, . . . . .	347	18,286,160	19,040,852	+754,702	+4.13
Furniture, . . . . .	135	7,428,451	7,442,816	+14,365	+0.19
Glass, . . . . .	13	127,008	135,165	+8,157	+6.42
Glue, isinglass, and starch, . . . . .	22	1,138,902	1,155,846	+16,944	+1.49

## CAPITAL INVESTED: BY INDUSTRIES — 1897, 1898 — Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AMOUNT OF CAPITAL INVESTED		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Amounts	Percent- ages
Hair work (animal and human), . .	4	\$109,425	\$106,625	—\$2,800	—2.56
Hose: rubber, linen, etc., . . .	6	1,156,994	663,625	—493,369	—42.64
Hosiery and knit goods, . . .	38	3,697,844	3,984,662	+286,718	+7.76
Ink, mucilage, and paste, . . .	7	75,488	80,396	+4,908	+6.50
Ivory, bone, shell, and horn goods, etc., . . . . .	19	362,504	396,457	+33,953	+9.92
Jewelry, . . . . .	93	2,637,874	2,796,860	+158,986	+6.03
Leather, . . . . .	95	6,231,541	6,533,029	+301,488	+4.84
Leather goods, . . . . .	30	1,385,725	1,385,149	—576	—0.04
Liquors (bottled) and carbonated beverages, . . . . .	29	522,470	530,920	+8,450	+1.62
Liquors (malt), . . . . .	31	10,994,076	11,414,441	+420,365	+3.82
Liquors (distilled), . . . . .	6	340,903	354,791	+13,888	+4.07
Lumber, . . . . .	29	1,492,315	1,240,568	—251,747	—16.87
Machines and machinery, . . .	359	32,677,927	32,686,813	+8,886	+0.03
Metals and metallic goods, . .	380	17,367,796	17,191,783	—176,013	—1.01
Models, lasts, and patterns, . .	42	719,987	815,880	+95,893	+13.32
Musical instruments and materials, . . . . .	64	3,745,420	3,684,222	—61,198	—4.30
Oils and illuminating fluids, . .	8	337,442	330,147	—7,295	—2.16
Paints, colors, and crude chemicals, . . . . .	29	853,019	798,334	—54,685	—6.41
Paper, . . . . .	80	20,546,478	20,733,967	+187,489	+0.91
Paper goods, . . . . .	34	3,244,822	3,462,523	+217,701	+6.71
Perfumes, toilet articles, etc., .	6	27,724	17,133	—10,591	—38.20
Photographs and photographic ma- terials, . . . . .	24	198,214	203,783	+5,569	+2.81
Polishes and dressing, . . . .	26	345,125	371,051	+25,926	+7.51
Printing, publishing, and bookbind- ing, . . . . .	62	4,050,856	4,461,865	+411,009	+10.15
Print works, dye works, and bleach- eries, . . . . .	49	11,769,233	12,674,871	+905,638	+7.69
Railroad construction and equip- ment, . . . . .	16	2,296,838	2,384,160	+87,322	+3.80
Rubber and elastic goods, . . .	47	11,165,376	10,875,309	—290,067	—2.60
Saddlery and harness, . . . .	35	218,094	199,541	—18,553	—8.51
Scientific instruments and appli- ances, . . . . .	20	1,127,682	1,165,360	+37,678	+3.34
Shipbuilding, . . . . .	46	1,049,969	1,115,989	+66,020	+6.29
Silk and silk goods, . . . . .	11	2,215,207	2,091,304	—123,903	—5.59
Sporting and athletic goods, . .	6	144,786	154,817	+10,031	+6.93
Stone, . . . . .	196	3,565,849	3,802,419	+236,570	+6.63
Quarried, . . . . .	51	1,814,678	2,039,528	+224,850	+12.39
Cut and monumental, . . . .	145	1,751,171	1,762,891	+11,720	+0.67
Straw and palm leaf goods, . . .	17	1,933,580	1,830,478	—103,102	—5.33
Tallow, candles, soap, and grease, .	66	2,393,068	2,279,445	—113,623	—4.75
Tobacco, snuff, and cigars, . .	63	1,595,556	1,373,779	—221,777	—13.90
Toys and games (children's), . .	10	318,275	329,688	+11,413	+3.59
Trunks and valises, . . . . .	7	48,392	40,810	—7,582	—15.67
Whips, lashes, and stocks, . . .	14	443,711	442,278	—1,433	—0.32
Wooden goods, . . . . .	73	1,665,116	1,684,287	+19,171	+1.15
Woollen goods, . . . . .	142	27,792,875	26,930,024	—862,851	—3.10
Woven goods and yarn, . . . .	126	27,072,301	26,270,699	—801,602	—2.96
Shoddy, waste, etc., . . . . .	16	720,574	659,325	—61,249	—8.50
Worsted goods, . . . . .	35	16,802,284	17,166,388	+364,104	+2.17
ALL INDUSTRIES, . . . . .	4,701	\$413,290,097	\$413,373,953	+\$83,856	+0.02





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## STOCK USED: BY INDUSTRIES.

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## STOCK USED: BY INDUSTRIES.

1897, 1898.

[In this presentation, the figures given under "Value of Stock Used" represent the returns made by the same establishments, in each industry, for the years 1897 and 1898, the whole number of establishments considered in "All Industries" being 4,701. Comparison is made, as regards value of stock used, between these two years. The relative increase or decrease in 1898 as compared with 1897 is given with its equivalent percentage.]

INDUSTRIES.	Number of Establishments Considered	VALUE OF STOCK USED		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Amounts	Percentages
Agricultural implements, . . . . .	9	\$362,983	\$358,543	-\$4,440	-1.22
Arms and ammunition, . . . . .	14	449,185	526,465	+77,280	+17.20
Artisans' tools, . . . . .	73	783,349	878,559	+95,210	+12.15
Awings, sails, tents, etc., . . . . .	42	294,404	303,478	+9,074	+3.08
Bicycles, tricycles, etc., . . . . .	18	1,255,054	1,437,035	+181,981	+14.50
Boots and shoes, . . . . .	644	65,182,608	67,386,674	+2,204,066	+3.38
Boots and shoes (factory product), . . . . .	430	56,677,132	57,833,445	+2,156,313	+3.87
Soles, heels, and cut stock, . . . . .	183	9,121,585	9,154,333	+32,748	+0.36
Boot and shoe findings, . . . . .	18	860,586	877,522	+16,936	+4.70
Stitching, heelings, etc., . . . . .	13	23,305	21,374	-1,931	-8.29
Boxes, barrels, kegs, etc., . . . . .	122	2,208,070	2,297,024	+88,954	+4.26
Boxes (paper), . . . . .	62	880,879	840,924	-39,955	-4.54
Brick, tiles, and sewer pipe, . . . . .	56	474,833	373,757	-101,076	-21.29
Brooms, brushes, and mops, . . . . .	23	667,686	779,759	+112,073	+16.79
Building materials, . . . . .	57	1,433,316	1,377,814	-55,502	-3.87
Burial cases, caskets, coffins, etc., . . . . .	6	197,792	195,016	-2,776	-1.40
Buttons and dress trimmings, . . . . .	13	847,354	825,562	-21,792	-6.27
Carpetings, . . . . .	12	3,898,404	3,638,475	-259,929	-6.67
Textile, . . . . .	8	3,638,555	3,200,843	-437,712	-9.54
Other, . . . . .	4	259,849	437,632	+177,783	+68.84
Carriages and wagons, . . . . .	136	1,444,902	1,469,680	+24,778	+1.71
Cement, kaolin, lime, and plaster, . . . . .	9	115,523	96,452	-19,071	-16.51
Chemical preparations (compound- ed), . . . . .	16	766,465	819,280	+52,815	+6.89
Clocks and watches, . . . . .	12	423,233	389,906	-33,327	-7.87
Clothing, . . . . .	152	11,011,856	10,668,998	-342,858	-3.11
Cooking, lighting, and heating ap- paratus, . . . . .	43	830,733	809,740	-20,993	-2.53
Cordage and twine, . . . . .	23	2,840,163	3,274,003	+433,840	+15.28
Cotton goods, . . . . .	169	50,857,806	47,294,087	-3,563,719	-7.01
Cotton goods (woven), . . . . .	120	42,233,440	38,189,198	-4,044,242	-9.58
Cotton yarn and thread, . . . . .	41	7,223,832	7,611,588	+387,756	+5.37
Cotton waste, . . . . .	8	1,400,534	1,493,301	+92,767	+6.62
Crayons, pencils, crucibles, etc., . . . . .	3	36,588	43,600	+7,012	+19.16
Drugs and medicines, . . . . .	25	1,147,028	1,308,692	+166,664	+13.66
Dyestuffs, . . . . .	6	277,056	321,620	+44,564	+16.08
Earthen, plaster, and stone ware, . . . . .	6	54,946	50,091	-4,855	-8.84
Electrical apparatus and appliances, . . . . .	21	2,288,515	3,020,585	+732,070	+31.99
Electroplating, . . . . .	11	22,661	80,170	+57,509	+253.14
Emery and sand paper and cloth, etc., . . . . .	10	856,217	887,098	+30,881	+3.60
Fancy articles, etc., . . . . .	19	226,608	245,894	+19,286	+8.51
Fertilizers, . . . . .	6	699,149	807,984	+108,835	+15.56
Fine arts and taxidermy, . . . . .	3	3,453	4,567	+1,114	+32.13
Fireworks and matches, . . . . .	4	64,043	61,579	-2,464	-3.85
Flax, hemp, and jute goods, . . . . .	8	905,568	831,018	-74,550	-8.23
Food preparations, . . . . .	347	52,161,160	53,175,766	+1,014,606	+1.95
Furniture, . . . . .	135	6,070,789	5,993,613	-77,176	-1.27
Glass, . . . . .	13	119,107	99,692	-19,415	-16.30
Glue, isinglass, and starch, . . . . .	22	853,660	881,738	+28,078	+3.29

## STOCK USED: BY INDUSTRIES—1897, 1898—Concluded.

INDUSTRIES.	Number of Establishments Considered	VALUE OF STOCK USED		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Amounts	Percentages
Hair work (animal and human), . .	4	\$200,180	\$192,740	—\$7,440	—3.72
Hose: rubber, linen, etc., . . .	6	734,936	342,325	—392,611	—53.42
Hosiery and knit goods, . . .	38	1,955,039	2,121,807	+166,768	+8.53
Ink, mucilage, and paste, . . .	7	181,431	202,758	+21,327	+11.75
Ivory, bone, shell, and horn goods, etc., . . . . .	19	480,457	605,144	+124,687	+25.95
Jewelry, . . . . .	93	2,321,065	2,755,706	+434,641	+18.73
Leather, . . . . .	95	14,582,557	14,929,168	+346,611	+2.73
Leather goods, . . . . .	30	1,526,158	1,671,751	+145,593	+9.54
Liquors (bottled) and carbonated beverages, . . . . .	29	647,448	684,563	+37,105	+5.73
Liquors (malt), . . . . .	31	2,791,762	2,838,190	+46,428	+1.66
Liquors (distilled), . . . . .	6	397,472	266,751	—130,721	—32.89
Lumber, . . . . .	29	1,312,656	1,187,498	—125,158	—9.53
Machines and machinery, . . .	359	9,276,096	10,142,326	+866,230	+9.34
Metals and metallic goods, . . .	390	9,845,665	10,734,998	+889,333	+9.03
Models, lasts, and patterns, . . .	42	282,924	265,715	—17,209	—6.05
Musical instruments and materials, . .	64	1,809,001	1,893,029	+84,028	+4.64
Oils and illuminating fluids, . . .	8	589,096	685,115	+96,019	+16.30
Paints, colors, and crude chemicals, .	29	949,971	1,000,496	+50,525	+5.32
Paper, . . . . .	80	10,175,492	11,166,843	+991,351	+9.74
Paper goods, . . . . .	34	3,454,346	3,505,205	+50,859	+1.47
Perfumes, toilet articles, etc., . . .	5	167,458	143,188	—24,270	—14.49
Photographs and photographic materials, . . . . .	24	237,008	258,562	+21,554	+9.25
Polishes and dressing, . . . . .	28	593,262	686,217	+92,955	+15.67
Printing, publishing, and bookbinding, . . . . .	62	2,033,529	2,298,046	+264,517	+12.12
Print works, dye works, and bleacheries, . . . . .	49	15,848,512	14,471,592	—1,376,920	—8.69
Railroad construction and equipment, . . . . .	16	1,390,727	1,485,268	+94,541	+6.80
Rubber and elastic goods, . . .	47	12,281,435	14,039,494	+1,758,059	+14.31
Saddlery and harness, . . . . .	35	478,296	482,395	+4,099	+0.86
Scientific instruments and appliances, . . . . .	20	795,044	824,230	+29,186	+3.67
Shipbuilding, . . . . .	46	559,084	712,070	+152,986	+27.36
Silk and silk goods, . . . . .	11	2,432,042	2,730,907	+298,865	+11.88
Sporting and athletic goods, . . .	5	97,368	74,593	—22,775	—23.39
Stone, . . . . .	196	1,245,053	1,238,398	—6,655	—0.53
Quarried, . . . . .	51	179,007	182,774	+3,767	+2.10
Cut and monumental, . . . . .	145	1,066,046	1,055,619	—10,427	—0.98
Straw and palm leaf goods, . . .	17	2,525,253	2,460,944	—64,309	—2.55
Tallow, candles, soap, and grease, .	66	2,344,227	2,228,110	—116,117	—4.95
Tobacco, snuff, and cigars, . . .	68	1,581,527	1,664,791	+83,264	+5.28
Toys and games (children's), . . .	10	247,673	276,480	+28,807	+11.65
Trunks and valises, . . . . .	7	56,181	40,389	—15,842	—28.20
Whips, lashes, and stocks, . . .	14	453,543	499,857	+46,314	+10.21
Wooden goods, . . . . .	73	1,031,008	1,062,490	+31,482	+3.06
Woollen goods, . . . . .	142	17,415,255	19,184,735	+1,769,480	+10.16
Woven goods and yarn, . . . . .	126	16,871,062	18,726,239	+1,855,177	+11.00
Shoddy, waste, etc., . . . . .	16	544,193	458,496	—85,697	—15.75
Worsted goods, . . . . .	35	15,070,871	15,923,830	+852,959	+5.66
ALL INDUSTRIES, . . . . .	4,701	\$354,314,944	\$362,846,417	+\$8,531,473	+2.41



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## GOODS MADE: BY INDUSTRIES.

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## GOODS MADE: BY INDUSTRIES.

1897, 1898.

[In this presentation, the figures given under "Value of Goods Made and Work Done" represent the returns made by the same establishments, in each industry, for the years 1897 and 1898, the whole number of establishments considered in "All Industries" being 4,701. Comparison is made, as regards the value of goods made and work done, between these two years. The relative increase or decrease in 1898 as compared with 1897 is given with its equivalent percentage.]

INDUSTRIES.	Number of Establishments Considered	VALUE OF GOODS MADE AND WORK DONE		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Amounts	Percentages
Agricultural implements, . . . . .	9	\$981,044	\$1,025,675	+\$44,631	+4.55
Arms and ammunition, . . . . .	14	1,820,982	1,971,568	+150,576	+8.27
Artisans' tools, . . . . .	73	2,676,879	3,045,419	+368,540	+13.77
Awnings, sails, tents, etc., . . . . .	42	537,880	575,800	+37,920	+7.06
Bicycles, tricycles, etc., . . . . .	18	3,349,841	2,827,921	-521,920	-15.57
Boots and shoes, . . . . .	644	104,042,441	107,188,460	+3,146,019	+3.02
Boots and shoes (factory product), . . . . .	430	91,074,414	94,162,857	+3,077,943	+3.38
Soles, heels, and cut stock, . . . . .	183	12,106,818	12,128,829	+22,511	+0.19
Boot and shoe findings, . . . . .	13	678,856	732,775	+53,920	+7.94
Sitching, heeling, etc., . . . . .	13	183,854	174,999	-8,355	-4.56
Boxes, barrels, kegs, etc., . . . . .	122	4,102,842	4,287,426	+185,084	+4.51
Boxes (paper), . . . . .	62	1,881,900	1,921,060	+39,860	+2.12
Brick, tiles, and sewer pipe, . . . . .	66	1,593,141	1,287,247	-305,894	-19.20
Brooms, brushes, and mops, . . . . .	23	1,224,172	1,359,060	+134,888	+11.02
Building materials, . . . . .	57	2,755,532	2,667,350	-88,182	-3.56
Burial cases, caskets, coffins, etc., . . . . .	6	354,168	346,153	-8,015	-2.26
Buttons and dress trimmings, . . . . .	13	801,293	800,877	-416	-0.06
Carpetings, . . . . .	12	3,384,709	6,016,943	+2,632,234	+78.10
Textile, . . . . .	8	5,857,675	5,298,216	-559,459	-9.55
Other, . . . . .	4	507,034	713,727	+206,693	+40.76
Carriages and wagons, . . . . .	136	3,479,985	3,501,135	+21,150	+0.61
Cement, kaolin, lime, and plaster, . . . . .	9	209,514	205,592	-4,022	-1.92
Chemical preparations (compound- ed), . . . . .	15	1,412,583	1,538,553	+125,970	+8.92
Clocks and watches, . . . . .	12	2,399,266	2,407,168	+7,902	+0.33
Clothing, . . . . .	152	19,958,467	19,848,573	-109,894	-0.55
Cooking, lighting, and heating ap- paratus, . . . . .	43	2,824,342	2,697,808	-126,534	-4.48
Cordage and twine, . . . . .	23	4,099,440	4,917,489	+818,049	+19.96
Cotton goods, . . . . .	169	88,272,454	88,374,733	+102,279	+0.12
Cotton goods (woven), . . . . .	120	74,807,663	72,106,797	-2,699,866	-3.35
Cotton yarn and thread, . . . . .	41	12,024,624	14,537,032	+2,512,408	+20.89
Cotton waste, . . . . .	8	1,640,167	1,730,904	+90,737	+5.53
Crayons, pencils, crucibles etc., . . . . .	3	63,188	102,060	+38,872	+61.65
Drugs and medicines, . . . . .	25	3,852,481	4,201,313	+348,832	+9.05
Dyestuffs, . . . . .	6	518,100	564,637	+46,537	+8.98
Earthen, plaster, and stone ware, . . . . .	6	214,413	210,764	-3,649	-1.70
Electrical apparatus and appliances, . . . . .	21	5,099,958	6,382,110	+1,282,152	+25.14
Electroplating, . . . . .	11	130,605	140,994	+10,389	+7.96
Emery and sand paper and cloth, etc., . . . . .	10	860,579	1,048,731	+188,152	+21.86
Fancy articles, etc., . . . . .	19	531,824	556,407	+24,583	+4.62
Fertilizers, . . . . .	6	1,719,091	1,930,250	+211,159	+12.28
Fine arts and taxidermy, . . . . .	3	28,495	33,583	+7,088	+26.75
Fireworks and matches, . . . . .	4	156,429	159,012	+2,583	+1.65
Flax, hemp, and jute goods, . . . . .	8	1,571,343	1,544,650	-26,693	-1.70
Food preparations, . . . . .	347	63,633,566	68,369,832	+4,736,266	+7.44
Furniture, . . . . .	135	11,263,227	11,285,238	+22,011	+0.20
Glass, . . . . .	13	340,566	316,281	-24,305	-7.14
Glue, isinglass, and starch, . . . . .	22	1,271,778	1,333,707	+61,929	+4.87

## GOODS MADE: BY INDUSTRIES—1897, 1898—Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	VALUE OF GOODS MADE AND WORK DONE		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Amounts	Percent- ages
Hair work (animal and human), . .	4	\$254,800	\$247,350	—\$7,450	—2.92
Hose: rubber, linen, etc., . . .	6	1,406,081	1,112,954	—293,077	—20.84
Hosiery and knit goods, . . . .	38	4,322,619	4,983,724	+661,105	+14.14
Ink, mucilage, and paste, . . .	7	400,206	435,467	+35,261	+8.81
Ivory, bone, shell, and horn goods, etc., . . . . .	19	1,021,751	1,297,483	+275,732	+26.99
Jewelry, . . . . .	98	5,713,150	6,780,698	+1,017,548	+17.81
Leather, . . . . .	95	19,317,480	19,647,769	+330,289	+1.71
Leather goods, . . . . .	30	2,488,316	2,776,017	+287,701	+11.56
Liquors (bottled) and carbonated beverages, . . . . .	29	1,188,432	1,212,560	+24,128	+2.03
Liquors (malt), . . . . .	31	8,892,736	9,561,752	+669,016	+7.52
Liquors (distilled), . . . . .	6	1,265,919	877,943	—387,976	—30.65
Lumber, . . . . .	29	2,234,108	2,023,967	—210,141	—9.41
Machines and machinery, . . .	359	26,979,408	28,964,913	+1,985,505	+7.36
Metals and metallic goods, . . .	380	21,703,203	23,323,223	+1,620,020	+7.46
Models, lasts, and patterns, . . .	42	1,088,536	1,044,875	—43,661	—4.01
Musical instruments and materials, etc., . . . . .	64	4,802,717	5,277,423	+474,706	+9.88
Oil and illuminating fluids, . . .	8	773,750	866,964	+93,214	+12.05
Paints, colors, and crude chemicals, Paper, . . . . .	29	1,555,020	1,667,282	+112,262	+7.22
Paper goods, . . . . .	80	18,181,485	20,104,855	+1,923,370	+10.83
Perfumes, toilet articles, etc., . .	34	5,887,753	5,622,850	—264,903	—4.50
Photographs and photographic ma- terials, . . . . .	5	198,957	172,316	—26,641	—13.39
Polishes and dressing, . . . . .	24	599,121	613,494	+14,373	+2.40
Printing, publishing, and bookbind- ing, . . . . .	26	1,355,130	1,417,551	+62,421	+4.61
Print works, dye works, and bleach- eries, . . . . .	62	7,550,011	8,653,069	+1,103,058	+14.61
Railroad construction and equip- ment, . . . . .	49	21,364,790	20,664,979	—699,811	—3.28
Rubber and elastic goods, . . .	16	3,083,923	3,111,537	+27,614	+0.90
Saddlery and harness, . . . . .	47	19,965,728	24,207,350	+4,241,622	+21.31
Scientific instruments and appli- ances, . . . . .	35	799,073	791,389	—7,684	—0.96
Shipbuilding, . . . . .	20	1,813,363	1,925,386	+112,023	+6.18
Silk and silk goods, . . . . .	46	1,264,337	1,450,634	+186,297	+14.73
Sporting and athletic goods, . . .	11	3,978,666	4,616,257	+637,591	+16.03
Stone, . . . . .	5	311,070	234,531	—76,539	—24.61
Quarried, . . . . .	196	5,067,731	4,814,130	—253,601	—5.00
Cut and monumental, . . . . .	51	1,935,721	1,805,731	—129,990	—6.72
Straw and palm leaf goods, . . .	145	3,132,010	3,008,399	—123,611	—3.95
Tallow, candles, soap, and grease, .	17	4,416,183	4,427,071	+10,888	+0.25
Tobacco, snuff, and cigars, . . .	66	3,728,185	3,655,566	—72,619	—1.95
Toys and games (children's), . . .	68	3,676,433	3,853,772	+177,339	+4.82
Trunks and valises, . . . . .	10	645,153	651,103	+5,950	+0.92
Whips, lashes, and stocks, . . .	7	130,097	116,110	—13,987	—10.76
Wooden goods, . . . . .	14	1,086,814	1,188,972	+102,158	+9.40
Woollen goods, . . . . .	73	2,105,247	2,137,265	+32,018	+1.52
Woven goods and yarn, . . . . .	142	29,622,054	31,633,908	+2,011,849	+6.79
Shoddy, waste, etc., . . . . .	126	28,811,941	30,914,561	+2,102,620	+7.30
Worsteds goods, . . . . .	16	810,113	719,342	—90,771	—11.20
ALL INDUSTRIES, . . . . .	35	24,694,793	25,818,730	+1,123,937	+4.55
ALL INDUSTRIES, . . . . .	4,701	\$612,568,342	\$640,871,843	+\$28,303,501	+4.62





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## PERSONS EMPLOYED: BY INDUSTRIES.

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[ 25 ]

## AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND INDUSTRIES.

[In this presentation, the average number of males, females, and both sexes for each industry are shown. The total number of establishments is 4,701, and the number of establishments in each industry is as given in all preceding tables. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Agricultural implements, . . . . .	592	-	592	618	-	618
Arms and ammunition, . . . . .	1,368	125	1,493	1,448	184	1,632
Artisans' tools, . . . . .	1,385	58	1,443	2,005	64	2,069
Awning, sails, tents, etc., . . . . .	158	69	227	152	79	231
Bicycles, tricycles, etc., . . . . .	2,252	65	2,317	1,708	58	1,761
Boots and shoes, . . . . .	34,709	15,346	50,055	35,650	16,247	51,897
Boots and shoes (factory product), . . . . .	31,808	13,905	45,713	32,321	14,708	47,024
Soles, heels, and cut stock, . . . . .	2,555	1,249	3,804	2,432	1,246	3,728
Boot and shoe findings, . . . . .	178	173	351	184	191	375
Stitching, healing, etc., . . . . .	172	120	292	163	107	270
Boxes, barrels, kegs, etc., . . . . .	2,188	451	2,639	2,205	452	2,657
Boxes (paper), . . . . .	499	1,234	1,733	506	1,270	1,776
Brick, tiles, and sewer pipe, . . . . .	1,440	4	1,444	1,245	3	1,247
Brooms, brushes, and mops, . . . . .	378	375	753	408	391	794
Building materials, . . . . .	1,296	8	1,304	1,278	3	1,280
Burial cases, caskets, coffins, etc., . . . . .	163	22	185	157	22	179
Buttons and dress trimmings, . . . . .	331	495	826	301	528	829
Carpetings, . . . . .	2,259	2,364	4,623	2,127	2,076	4,203
Textile, . . . . .	2,168	2,310	4,478	2,035	1,998	4,033
Other, . . . . .	96	54	147	102	78	180
Carriages and wagons, . . . . .	1,917	12	1,929	1,885	12	1,897
Cement, kaolin, lime, and plaster, . . . . .	129	-	129	129	-	129
Chemical preparations (compounded), . . . . .	437	14	451	414	13	427
Clocks and watches, . . . . .	1,072	1,112	2,184	1,067	1,325	2,392
Clothing, . . . . .	2,770	6,414	9,184	2,784	6,573	9,357
Cooking, lighting, and heating apparatus, . . . . .	1,667	5	1,672	1,601	7	1,608
Cordage and twine, . . . . .	1,156	722	1,878	1,253	707	1,960
Cotton goods, . . . . .	41,094	40,101	81,195	41,332	40,063	81,395
Cotton goods (woven), . . . . .	36,582	35,387	71,919	36,368	34,767	71,130
Cotton yarn and thread, . . . . .	4,270	4,689	8,959	4,707	5,153	9,860
Cotton waste, . . . . .	242	125	367	262	133	395
Crayons, pencils, crucibles, etc., . . . . .	22	26	48	27	35	62
Drugs and medicines, . . . . .	282	294	576	289	301	590
Dyestuffs, . . . . .	84	41	125	84	47	131
Earthen, plaster, and stone ware, . . . . .	166	29	195	168	37	205
Electrical apparatus and appliances, . . . . .	2,458	449	2,907	2,913	577	3,490
Electroplating, . . . . .	108	5	111	101	5	106
Emery and sand paper and cloth, etc., . . . . .	336	8	344	428	-	428
Fancy articles, etc., . . . . .	121	218	339	134	221	355
Fertilizers, . . . . .	197	-	197	213	-	213
Fine arts and taxidermy, . . . . .	12	1	13	16	1	17
Fireworks and matches, . . . . .	67	30	97	61	29	90
Flax, hemp, and jute goods, . . . . .	520	755	1,275	531	752	1,283
Food preparations, . . . . .	6,584	2,404	8,988	6,650	2,517	9,176
Furniture, . . . . .	4,685	602	5,287	4,736	600	5,336

## PERSONS EMPLOYED: BY INDUSTRIES—Continued.

## AVERAGE NUMBER OF PERSONS EMPLOYED: BY SEX AND INDUSTRIES—1897, 1898—Concluded.

INDUSTRIES.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Glass, . . . . .	259	14	273	242	14	256
Glue, isinglass, and starch, . . . . .	398	40	438	373	43	416
Hair work (animal and human), . . . . .	62	70	132	50	54	104
Hose: rubber, linen, etc., . . . . .	586	154	690	411	92	508
Hosiery and knit goods, . . . . .	1,514	3,668	5,177	1,666	4,160	5,826
Ink, mucilage, and paste, . . . . .	42	22	64	41	27	68
Ivory, bone, shell, and horn goods, etc., . . . . .	649	137	786	768	158	921
Jewelry, . . . . .	2,124	1,022	3,146	2,505	1,299	3,804
Leather, . . . . .	5,568	29	5,597	5,440	25	5,465
Leather goods, . . . . .	665	241	906	729	277	1,006
Liquors (bottled) and carbonated beverages, . . . . .	288	2	290	282	4	286
Liquors (malt), . . . . .	1,505	—	1,505	1,515	—	1,515
Liquors (distilled), . . . . .	81	—	81	26	—	26
Lumber, . . . . .	715	8	723	682	7	689
Machines and machinery, . . . . .	17,950	311	18,261	18,371	287	18,658
Metals and metallic goods, . . . . .	12,113	1,331	13,444	12,091	1,359	13,450
Models, lasts, and patterns, . . . . .	484	1	485	499	1	500
Musical instruments and materials, . . . . .	2,401	150	2,551	2,506	188	2,694
Oils and illuminating fluids, . . . . .	98	11	104	91	11	102
Paints, colors, and crude chemicals, . . . . .	254	16	270	270	22	292
Paper, . . . . .	5,067	3,453	8,510	5,319	3,478	8,797
Paper goods, . . . . .	1,125	1,400	2,525	1,263	1,617	2,880
Perfumes, toilet articles, etc., . . . . .	12	15	27	10	12	22
Photographs and photographic materials, . . . . .	139	96	235	138	100	238
Polishes and dressing, . . . . .	101	118	219	111	134	245
Printing, publishing, and bookbinding, . . . . .	2,446	1,448	3,894	2,627	1,577	4,204
Print works, dye works, and bleacheries, . . . . .	4,990	1,049	6,039	4,899	1,115	6,014
Railroad construction and equipment, . . . . .	2,639	—	2,639	2,496	—	2,496
Rubber and elastic goods, . . . . .	4,961	4,186	9,147	5,202	4,357	9,559
Saddlery and harness, . . . . .	344	22	366	330	21	351
Scientific instruments and appliances, . . . . .	1,088	199	1,287	1,157	254	1,411
Shipbuilding, . . . . .	776	—	776	735	—	735
Silk and silk goods, . . . . .	788	1,552	2,339	848	1,681	2,529
Sporting and athletic goods, . . . . .	189	26	215	158	28	186
Stone, . . . . .	4,478	—	4,478	4,351	—	4,351
Quarried, . . . . .	2,384	—	2,384	2,443	—	2,443
Cut and monumental, . . . . .	2,094	—	2,094	1,908	—	1,908
Straw and palm leaf goods, . . . . .	944	1,581	2,525	946	1,578	2,524
Tallow, candles, soap, and grease, . . . . .	768	78	841	727	82	809
Tobacco, snuff, and cigars, . . . . .	1,377	530	1,907	1,464	571	2,035
Toys and games (children's), . . . . .	405	79	484	396	84	480
Trunks and valises, . . . . .	62	6	68	67	6	73
Whips, lashes, and stocks, . . . . .	295	119	414	332	136	468
Wooden goods, . . . . .	1,370	71	1,441	1,379	67	1,446
Woollen goods, . . . . .	12,338	6,947	19,285	12,415	7,023	19,438
Woven goods and yarn, . . . . .	12,102	6,830	18,962	12,184	6,956	19,140
Shoddy, waste, etc., . . . . .	236	67	303	231	67	298
Worsteds goods, . . . . .	7,058	5,917	12,975	7,044	6,063	13,107
ALL INDUSTRIES, . . . . .	216,821	109,957	326,778	219,560	113,109	332,669

## AVERAGE NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES.

[In this presentation, the aggregate average number of persons employed is brought forward from the column "Both Sexes" in the preceding table. The increase or decrease in 1898 as compared with 1897 is given in both number and percentages. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	Number of Establishments Considered	AGGREGATE AVERAGE NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Number	Percentages
Agricultural implements, . . . . .	9	592	613	+21	+3.55
Arms and ammunition, . . . . .	14	1,493	1,562	+69	+5.96
Artisans' tools, . . . . .	73	1,938	2,069	+131	+6.76
Awnings, sails, tents, etc., . . . . .	42	222	231	+9	+4.06
Bicycles, tricycles, etc., . . . . .	18	2,317	1,761	-556	-24.00
Boots and shoes, . . . . .	644	50,065	51,897	+1,832	+3.68
Boots and shoes (factory product), . . . . .	480	45,611	47,524	+1,913	+4.19
Soles, heels, and out stock, . . . . .	183	3,804	3,728	-76	-2.00
Boot and shoe findings, . . . . .	18	348	375	+27	+7.76
Stitching, beeling, etc., . . . . .	18	292	270	-22	-7.53
Boxes, barrels, kegs, etc., . . . . .	122	2,639	2,657	+18	+0.68
Boxes (paper), . . . . .	62	1,733	1,776	+43	+2.48
Brick, tiles, and sewer pipe, . . . . .	66	1,444	1,247	-197	-13.64
Brooms, brushes, and mops, . . . . .	23	748	794	+46	+6.15
Building materials, . . . . .	6	1,299	1,280	-19	-1.46
Burial cases, caskets, coffins, etc., . . . . .	6	185	179	-6	-3.24
Buttons and dress trimmings, . . . . .	13	826	829	+3	+0.36
Carpetings, . . . . .	12	4,623	4,203	-420	-9.09
Textile, . . . . .	8	4,476	4,023	-453	-10.12
Other, . . . . .	4	147	180	+33	+22.45
Carriages and wagons, . . . . .	136	1,929	1,897	-32	-1.66
Cement, kaolin, lime, and plaster, . . . . .	9	129	129	=	=
Chemical preparations (compounded), . . . . .	15	451	427	-24	-5.32
Clocks and watches, . . . . .	12	2,184	2,382	+198	+9.07
Clothing, . . . . .	152	9,184	9,357	+173	+1.88
Cooking, lighting, and heating apparatus, . . . . .	43	1,672	1,608	-64	-3.83
Cordage and twine, . . . . .	23	1,878	1,960	+82	+4.37
Cotton goods, . . . . .	169	81,195	81,385	+190	+0.23
Cotton goods (woven), . . . . .	120	71,919	71,130	-789	-1.10
Cotton yarn and thread, . . . . .	41	8,909	9,860	+951	+10.67
Cotton waste, . . . . .	8	367	395	+28	+7.63
Crayons, pencils, crucibles, etc., . . . . .	3	48	62	+14	+29.17
Drugs and medicines, . . . . .	25	576	590	+14	+2.43
Dyestuffs, . . . . .	6	125	131	+6	+4.80
Earthen, plaster, and stone ware, . . . . .	6	195	205	+10	+5.13
Electrical apparatus and appliances, . . . . .	21	2,942	3,495	+553	+18.80
Electroplating, . . . . .	11	111	106	-5	-4.50
Emery and sand paper and cloth, etc., . . . . .	10	339	428	+89	+26.25
Fancy articles, etc., . . . . .	19	339	355	+16	+4.72
Fertilizers, . . . . .	6	197	213	+16	+8.12
Fine arts and taxidermy, . . . . .	3	13	17	+4	+30.77
Fireworks and matches, . . . . .	4	97	90	-7	-7.22
Flax, hemp, and jute goods, . . . . .	8	1,275	1,283	+8	+0.63
Food preparations, . . . . .	347	8,938	9,176	+238	+2.66
Furniture, . . . . .	135	5,297	5,326	+29	+0.55

\* No change.

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AVERAGE NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES — 1897, 1898 — Concluded.

INDUSTRIES.	Number of Establishments Considered	AGGREGATE AVERAGE NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Number	Percentages
Glass, . . . . .	13	273	256	—17	—6.23
Glue, isinglass, and starch, . . . . .	22	433	416	—17	—3.93
Hair work (animal and human), . . . . .	4	132	104	—28	—21.21
Hose: rubber, linen, etc., . . . . .	6	690	503	—187	—27.10
Hosiery and knit goods, . . . . .	38	5,177	5,826	+649	+12.54
Ink, mucilage, and paste, . . . . .	7	64	68	+4	+6.25
Ivory, bone, shell, and horn goods, etc., . . . . .	19	786	921	+135	+17.18
Jewelry, . . . . .	93	3,146	3,804	+658	+20.92
Leather, . . . . .	95	5,597	5,465	—132	—2.36
Leather goods, . . . . .	30	906	1,006	+100	+11.04
Liquors (bottled) and carbonated beverages, . . . . .	29	290	286	—4	—1.38
Liquors (malt), . . . . .	51	1,505	1,513	+8	+0.53
Liquors (distilled), . . . . .	6	81	26	—55	—66.80
Lumber, . . . . .	29	723	689	—34	—4.70
Machines and machinery, . . . . .	359	18,261	18,658	+397	+2.17
Metals and metallic goods, . . . . .	380	18,444	18,450	+6	+0.04
Models, lasts, and patterns, . . . . .	42	485	500	+15	+3.09
Musical instruments and materials, . . . . .	64	2,551	2,664	+113	+4.43
Oils and illuminating fluids, . . . . .	8	104	102	—2	—1.92
Paints, colors, and crude chemicals, . . . . .	29	270	292	+22	+8.15
Paper, . . . . .	80	8,510	8,797	+287	+3.37
Paper goods, . . . . .	34	2,525	2,880	+355	+14.06
Perfumes, toilet articles, etc., . . . . .	5	27	22	—5	—18.52
Photographs and photographic materials, . . . . .	24	235	238	+3	+1.28
Polishes and dressing, . . . . .	26	219	245	+26	+11.87
Printing, publishing, and bookbinding, . . . . .	62	3,894	4,204	+310	+7.96
Print works, dye works, and bleacheries, . . . . .	49	6,039	6,014	—25	—0.41
Railroad construction and equipment, . . . . .	16	2,689	2,498	—191	—7.10
Rubber and elastic goods, . . . . .	47	9,147	9,559	+412	+4.50
Saddlery and harness, . . . . .	35	366	351	—15	—4.10
Scientific instruments and appliances, . . . . .	20	1,287	1,411	+124	+9.63
Shipbuilding, . . . . .	46	776	735	—41	—5.28
Silk and silk goods, . . . . .	11	2,385	2,529	+144	+6.03
Sporting and athletic goods, . . . . .	5	215	166	—49	—22.79
Stone, . . . . .	196	4,478	4,351	—127	—2.84
Quarried, . . . . .	51	2,384	2,448	+64	+2.69
Cut and monumental, . . . . .	145	2,094	1,908	—186	—8.88
Straw and palm leaf goods, . . . . .	17	2,525	2,524	—1	—0.04
Tallow, candles, soap, and grease, . . . . .	66	841	809	—32	—3.80
Tobacco, snuff, and cigars, . . . . .	63	1,907	2,035	+128	+6.71
Toys and games (children's), . . . . .	10	494	480	—14	—2.83
Trunks and valises, . . . . .	7	68	78	+10	+14.71
Whips, lashes, and stocks, . . . . .	14	414	468	+54	+13.04
Wooden goods, . . . . .	73	1,441	1,446	+5	+0.35
Woollen goods, . . . . .	142	19,286	19,438	+152	+0.79
Woven goods and yarn, . . . . .	126	18,982	19,140	+158	+0.83
Shoddy, waste, etc., . . . . .	16	303	298	—5	—1.65
Worsted goods, . . . . .	85	12,976	13,107	+131	+1.02
ALL INDUSTRIES, . . . . .	4,701	328,778	332,669	+3,891	+1.80

## SMALLEST NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES.

[In this presentation, by the term "Periods of employment of smallest number" is meant the time, reported by each establishment, when the smallest number of persons, in the aggregate, was employed. The increase or decrease in 1898 as compared with 1897 is given in both number and percentages. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	Number of Establishments Considered	AGGREGATE NUMBER OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF SMALLEST NUMBER		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Number	Percentages
Agricultural implements, . . . . .	9	474	486	+12	+2.53
Arms and ammunition, . . . . .	14	1,202	963	-239	-19.88
Artisans' tools, . . . . .	73	1,775	1,850	+75	+4.23
Awnings, sails, tents, etc., . . . . .	42	156	152	-4	-2.56
Bicycles, tricycles, etc., . . . . .	18	1,041	868	-173	-16.62
Boots and shoes, . . . . .	644	40,058	41,166	+1,108	+2.77
Boots and shoes (factory product), . . . . .	430	36,461	37,700	+1,239	+3.40
Soles, heels, and cut stock, . . . . .	183	3,096	2,967	-129	-4.17
Boot and shoe findings, . . . . .	18	308	318	+10	+3.25
Stitching, heeling, etc., . . . . .	13	198	181	-17	-8.59
Boxes, barrels, kegs, etc., . . . . .	122	2,173	2,244	+71	+3.27
Boxes (paper), . . . . .	62	1,478	1,513	+35	+2.37
Brick, tiles, and sewer pipe, . . . . .	56	686	570	-116	-16.91
Brooms, brushes, and mops, . . . . .	23	668	719	+51	+7.63
Building materials, . . . . .	57	1,032	1,045	+13	+1.26
Burial cases, caskets, coffins, etc., . . . . .	6	177	171	-6	-3.39
Buttons and dress trimmings, . . . . .	13	606	648	+42	+6.93
Carpetings, . . . . .	12	4,207	3,344	-863	-20.51
Textile, . . . . .	8	4,087	3,204	-883	-21.61
Other, . . . . .	4	120	140	+20	+16.67
Carriages and wagons, . . . . .	136	1,479	1,463	-16	-1.06
Cement, kaolin, lime, and plaster, . . . . .	9	110	98	-12	-10.91
Chemical preparations (compounded), . . . . .	15	404	395	-9	-2.23
Clocks and watches, . . . . .	12	2,143	2,211	+68	+3.17
Clothing, . . . . .	152	6,867	7,391	+524	+7.63
Cooking, lighting, and heating apparatus, . . . . .	43	1,306	1,225	-81	-6.20
Cordage and twine, . . . . .	23	1,593	1,708	+115	+7.22
Cotton goods, . . . . .	169	71,385	69,968	-1,417	-1.99
Cotton goods (woven), . . . . .	120	62,860	60,391	-2,469	-3.93
Cotton yarn and thread, . . . . .	41	8,180	9,211	+1,031	+12.60
Cotton waste, . . . . .	8	345	366	+21	+6.09
Crayons, pencils, crucibles, etc., . . . . .	3	87	33	-54	-62.08
Drugs and medicines, . . . . .	25	431	449	+18	+4.18
Dyestuffs, . . . . .	6	77	76	-1	-1.30
Earthen, plaster, and stone ware, . . . . .	6	169	193	+24	+14.20
Electrical apparatus and appliances, . . . . .	21	2,596	2,787	+191	+7.36
Electroplating, . . . . .	11	83	92	+9	+10.84
Emery and sand paper and cloth, etc., . . . . .	10	307	360	+53	+17.26
Fancy articles, etc., . . . . .	19	143	167	+24	+16.78
Fertilizers, . . . . .	6	176	189	+13	+7.39
Fine arts and taxidermy, . . . . .	3	11	16	+5	+45.45
Fireworks and matches, . . . . .	4	36	50	+14	+38.89
Flax, hemp, and jute goods, . . . . .	8	1,206	1,138	-67	-5.56
Food preparations, . . . . .	347	7,676	7,911	+235	+3.06
Furniture, . . . . .	135	4,429	4,466	+36	+0.81

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## SMALLEST NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES — 1897, 1898 — Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AGGREGATE NUMBER OF PERSONS EM- PLOYED AT PERIODS OF EMPLOYMENT OF SMALLEST NUMBER		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Number	Percent- ages
Glass, . . . . .	13	146	168	+22	+15.07
Glue, isinglass, and starch, . . . . .	22	354	346	—8	—2.26
Hair work (animal and human), . . . . .	4	120	96	—24	—20.00
Hose: rubber, linen, etc., . . . . .	6	408	252	—151	—37.47
Hosiery and knit goods, . . . . .	38	4,656	5,129	+473	+10.16
Ink, muclage, and paste, . . . . .	7	58	54	+1	+1.69
Ivory, bone, shell, and horn goods, etc., . . . . .	19	689	787	+148	+23.16
Jewelry, . . . . .	93	2,526	2,914	+388	+15.36
Leather, . . . . .	95	4,514	4,361	—153	—3.39
Leather goods, . . . . .	30	791	853	+62	+7.84
Liquors (bottled) and carbonated beverages, . . . . .	29	219	215	—4	—1.83
Liquors (malt), . . . . .	31	1,363	1,377	+14	+1.03
Liquors (distilled), . . . . .	6	28	23	—5	—17.86
Lumber, . . . . .	29	499	560	+61	+12.22
Machines and machinery, . . . . .	359	15,065	15,438	+353	+2.34
Metals and metallic goods, . . . . .	380	10,968	10,934	—24	—0.22
Models, lasts, and patterns, . . . . .	42	407	428	+21	+5.16
Musical instruments and materials, . . . . .	64	1,914	2,202	+288	+15.06
Oils and illuminating fluids, . . . . .	8	83	87	+4	+4.82
Paints, colors, and crude chemicals, . . . . .	29	249	267	+18	+7.23
Paper, . . . . .	80	7,687	7,972	+285	+3.71
Paper goods, . . . . .	34	2,169	2,445	+276	+12.72
Perfumes, toilet articles, etc., . . . . .	5	22	12	—10	—45.45
Photographs and photographic materials, . . . . .	24	190	197	+7	+3.68
Polishes and dressing, . . . . .	26	165	184	+19	+11.52
Printing, publishing, and bookbinding, . . . . .	62	3,388	3,614	+226	+6.67
Print works, dye works, and bleacheries, . . . . .	49	5,156	5,156	*=	*=
Railroad construction and equipment, . . . . .	16	2,417	2,202	—215	—8.90
Rubber and elastic goods, . . . . .	47	7,698	8,254	+556	+7.22
Saddlery and harness, . . . . .	35	292	324	+32	+10.96
Scientific instruments and appliances, . . . . .	20	1,117	1,182	+65	+5.82
Shipbuilding, . . . . .	46	496	471	—25	—5.04
Silk and silk goods, . . . . .	11	2,089	2,189	+100	+4.79
Sporting and athletic goods, . . . . .	5	143	93	—50	—34.97
Stone, . . . . .	196	2,768	2,878	+110	+3.97
Quarried, . . . . .	51	1,396	1,619	+223	+15.97
Cut and monumental, . . . . .	145	1,372	1,259	—113	—8.24
Straw and palm leaf goods, . . . . .	17	564	636	+72	+12.77
Tallow, candles, soap, and grease, . . . . .	66	778	769	—9	—1.16
Tobacco, snuff, and cigars, . . . . .	63	1,566	1,642	+76	+4.85
Toys and games (children's), . . . . .	10	314	321	+7	+2.23
Trunks and valises, . . . . .	7	52	61	+9	+17.31
Whips, lashes, and stocks, . . . . .	14	371	418	+47	+12.67
Wooden goods, . . . . .	73	1,156	1,161	+5	+0.43
Woollen goods, . . . . .	142	16,559	15,026	—1,533	—9.26
Woven goods and yarn, . . . . .	126	16,334	14,833	—1,501	—9.19
Shoddy, waste, etc., . . . . .	16	225	193	—32	—14.22
Worsted goods, . . . . .	35	11,744	10,025	—1,719	—14.64
ALL INDUSTRIES, . . . . .	4,701	272,204	271,847	—357	—0.13

\* No change.



## GREATEST NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES.

[In this presentation, by the term "Periods of employment of greatest number" is meant the time, reported by each establishment, when the greatest number of persons, in the aggregate, was employed. The increase or decrease in 1898 as compared with 1897 is given in both number and percentages. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	Number of Establishments Considered	AGGREGATE NUMBER OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF GREATEST NUMBER		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Number	Percentages
Agricultural implements, . . . . .	9	667	688	+21	+3.15
Arms and ammunition, . . . . .	14	1,978	2,167	+179	+9.05
Artisans' tools, . . . . .	73	2,070	2,263	+193	+9.32
Awnings, sails, tents, etc., . . . . .	42	326	359	+33	+10.12
Bicycles, tricycles, etc., . . . . .	18	3,823	2,861	-962	-25.16
Boots and shoes, . . . . .	644	59,756	62,242	+2,486	+4.16
Boots and shoes (factory product), . . . . .	430	54,424	56,976	+2,552	+4.69
Soles, heels, and cut stock, . . . . .	183	4,546	4,491	-55	-1.21
Boot and shoe findings, . . . . .	18	420	442	+22	+5.24
Stitching, heeling, etc., . . . . .	13	366	338	-33	-9.02
Boxes, barrels, kegs, etc., . . . . .	122	3,068	3,045	-15	-0.49
Boxes (paper), . . . . .	62	1,989	2,041	+52	+2.61
Brick, tiles, and sewer pipe, . . . . .	56	2,435	2,293	-142	-5.83
Brooms, brushes, and mops, . . . . .	23	842	902	+60	+7.13
Building materials, . . . . .	57	1,647	1,528	-119	-7.23
Burial cases, caskets, coffins, etc., . . . . .	6	194	189	-5	-2.58
Buttons and dress trimmings, . . . . .	13	1,066	1,097	+31	+2.91
Carpetings, . . . . .	12	4,943	4,879	-64	-1.29
Textile, . . . . .	8	4,753	4,654	-99	-2.08
Other, . . . . .	4	190	225	+35	+18.43
Carriages and wagons, . . . . .	136	2,435	2,373	-57	-2.34
Cement, kaolin, lime, and plaster, . . . . .	9	148	153	+5	+3.38
Chemical preparations (compounded), . . . . .	15	488	465	-23	-4.71
Clocks and watches, . . . . .	12	2,640	2,633	-7	-0.26
Clothing, . . . . .	162	10,992	11,042	+50	+0.45
Cooking, lighting, and heating apparatus, . . . . .	43	1,983	1,929	-54	-2.73
Cordage and twine, . . . . .	23	2,119	2,246	+127	+5.99
Cotton goods, . . . . .	169	87,283	88,134	+851	+0.97
Cotton goods (woven), . . . . .	120	77,101	77,316	+215	+0.28
Cotton yarn and thread, . . . . .	41	9,785	10,398	+613	+6.26
Cotton waste, . . . . .	8	397	420	+23	+5.79
Crayons, pencils, crucibles, etc., . . . . .	3	59	100	+41	+69.49
Drugs and medicines, . . . . .	25	722	736	+14	+1.94
Dyestuffs, . . . . .	6	159	160	+1	+0.63
Earthen, plaster, and stone ware, . . . . .	6	215	223	+8	+3.72
Electrical apparatus and appliances, . . . . .	21	3,401	3,983	+582	+17.44
Electroplating, . . . . .	11	151	128	-23	-15.23
Emery and sand paper and cloth, etc., . . . . .	10	385	503	+118	+30.65
Fancy articles, etc., . . . . .	19	636	670	+34	+5.35
Fertilizers, . . . . .	6	261	279	+18	+6.90
Fine arts and taxidermy, . . . . .	3	14	21	+7	+50.00
Fireworks and matches, . . . . .	4	133	123	-10	-7.52
Flax, hemp, and jute goods, . . . . .	8	1,345	1,356	+11	+0.82

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## GREATEST NUMBER OF PERSONS EMPLOYED: BY INDUSTRIES — 1897, 1898 — Concluded.

INDUSTRIES.	Number of Establishments Considered	AGGREGATE NUMBER OF PERSONS EMPLOYED AT PERIODS OF EMPLOYMENT OF GREATEST NUMBER		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Number	Percentages
Food preparations, . . . . .	347	10,728	11,296	+567	+5.29
Furniture, . . . . .	135	6,196	6,166	—30	—0.48
Glass, . . . . .	13	325	315	—10	—3.08
Glue, isinglass, and starch, . . . .	22	648	632	—16	—2.47
Hair work (animal and human), . . .	4	141	109	—32	—22.70
Hose: rubber, linen, etc., . . . . .	6	1,063	961	—102	—9.60
Hosiery and knit goods, . . . . .	38	6,120	6,413	+293	+4.79
Ink, mucilage, and paste, . . . . .	7	73	81	+8	+10.96
Ivory, bone, shell, and horn goods, etc.,	19	965	1,070	+105	+10.88
Jewelry, . . . . .	93	3,875	4,378	+1,003	+25.88
Leather, . . . . .	95	6,685	6,507	—178	—2.66
Leather goods, . . . . .	30	1,036	1,136	+100	+9.65
Liquors (bottled) and carbonated beverages, . . . . .	29	419	391	—28	—6.68
Liquors (malt), . . . . .	31	1,615	1,640	+25	+1.55
Liquors (distilled), . . . . .	6	82	29	—53	—64.28
Lumber, . . . . .	29	893	923	+30	+3.92
Machines and machinery, . . . . .	359	21,728	21,634	—94	—0.43
Metals and metallic goods, . . . . .	380	15,822	16,306	+484	+3.06
Models, lasts, and patterns, . . . .	42	579	596	+17	+2.94
Musical instruments and materials, . .	64	2,946	3,064	+118	+3.99
Oils and illuminating fluids, . . . .	8	128	116	—12	—9.38
Paints, colors, and crude chemicals, .	29	321	324	+3	+0.93
Paper, . . . . .	80	9,070	9,301	+231	+2.55
Paper goods, . . . . .	34	2,989	3,253	+264	+8.83
Perfumes, toilet articles, etc., . . .	5	32	28	—4	—12.50
Photographs and photographic materials,	24	268	271	+3	+1.12
Polishes and dressing, . . . . .	26	280	301	+21	+7.50
Printing, publishing, and bookbinding, .	62	4,368	4,823	+455	+10.42
Print works, dye works, and bleacheries,	49	6,620	6,590	—30	—0.45
Railroad construction and equipment, .	16	2,960	2,855	—105	—3.55
Rubber and elastic goods, . . . . .	47	10,309	10,866	+557	+5.40
Saddlery and harness, . . . . .	35	399	382	—17	—4.26
Scientific instruments and appliances, .	20	1,427	1,533	+106	+7.43
Shipbuilding, . . . . .	46	1,176	1,099	—77	—6.55
Silk and silk goods, . . . . .	11	2,546	2,788	+242	+9.51
Sporting and athletic goods, . . . .	5	267	238	—29	—10.86
Stone, . . . . .	196	6,076	5,929	—147	—2.42
Quarried, . . . . .	51	3,239	3,320	+81	+2.50
Cut and monumental, . . . . .	145	2,837	2,609	—228	—8.04
Straw and palm leaf goods, . . . . .	17	4,410	4,467	+57	+1.29
Tallow, candles, soap, and grease, . .	66	908	928	+20	+2.20
Tobacco, snuff, and cigars, . . . .	63	2,174	2,423	+249	+11.45
Toys and games (children's), . . . .	10	613	619	+6	+0.98
Trunks and valises, . . . . .	7	82	78	—4	—4.88
Whips, lashes, and stocks, . . . . .	14	455	558	+103	+22.20
Wooden goods, . . . . .	73	1,651	1,675	+24	+1.45
Woollen goods, . . . . .	142	21,576	22,244	+668	+3.10
Woven goods and yarn, . . . . .	126	21,215	21,861	+646	+3.05
Shoddy, waste, etc., . . . . .	16	361	383	+22	+6.09
Worsted goods, . . . . .	35	14,180	14,791	+611	+4.33
ALL INDUSTRIES, . . . . .	4,701	377,399	396,383	+18,984	+5.03

## RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES.

[In this presentation, the excess of greatest over smallest number of persons, as obtained from the tables on pages 30 to 33, is shown, and a comparison is made between the two years. The relative increase or decrease in the excess of greatest over smallest number employed in 1898 as compared with 1897 is given with its equivalent percentage. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

INDUSTRIES.	Number of Establishments Considered	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Number	Percentages
Agricultural implements, . . . . .	9	193	202	+9	+4.66
Arms and ammunition, . . . . .	14	776	1,194	+418	+53.87
Artisans' tools, . . . . .	73	295	413	+118	+40.00
Awnings, sails, tents, etc., . . . . .	42	170	207	+37	+21.76
Bicycles, tricycles, etc., . . . . .	18	2,782	1,993	—789	—28.36
Boots and shoes, . . . . .	644	19,698	21,076	+1,378	+7.00
Boots and shoes (factory product), . . . . .	430	17,963	19,276	+1,313	+7.31
Soles, heels, and cut stock, . . . . .	183	1,450	1,524	+74	+5.10
Boot and shoe findings, . . . . .	18	117	124	+7	+5.98
Stitching, heeling, etc., . . . . .	13	168	152	—16	—9.52
Boxes, barrels, kegs, etc., . . . . .	122	885	799	—86	—9.72
Boxes (paper), . . . . .	62	511	528	+17	+3.33
Brick, tiles, and sewer pipe, . . . . .	56	1,849	1,723	—126	—6.81
Brooms, brushes, and mops, . . . . .	23	174	183	+9	+5.17
Building materials, . . . . .	57	515	493	—32	—6.21
Burial cases, caskets, coffins, etc., . . . . .	6	17	18	+1	+5.88
Buttons and dress trimmings, . . . . .	13	490	449	—41	—8.39
Carpetings, . . . . .	12	736	1,535	+799	+108.56
Textile, . . . . .	8	666	1,450	+784	+117.72
Other, . . . . .	4	70	85	+15	+21.43
Carriages and wagons, . . . . .	186	956	915	—41	—4.29
Cement, kaolin, lime, and plaster, . . . . .	9	88	55	—33	—37.50
Chemical preparations (compounded), . . . . .	15	84	70	—14	—16.67
Clocks and watches, . . . . .	12	506	422	—84	—16.60
Clothing, . . . . .	152	4,125	3,651	—474	—11.49
Cooking, lighting, and heating apparatus, . . . . .	43	677	704	+27	+3.99
Cordage and twine, . . . . .	23	526	538	+12	+2.28
Cotton goods, . . . . .	169	15,898	18,166	+2,268	+14.27
Cotton goods (woven), . . . . .	120	14,241	16,925	+2,684	+18.85
Cotton yarn and thread, . . . . .	41	1,605	1,187	—418	—26.04
Cotton waste, . . . . .	8	52	54	+2	+3.85
Crayons, pencils, crucibles, etc., . . . . .	3	22	67	+45	+204.55
Drugs and medicines, . . . . .	25	291	287	—4	—1.37
Dyestuffs, . . . . .	6	82	84	+2	+2.44
Earthen, plaster, and stone ware, . . . . .	6	46	30	—16	—34.78
Electrical apparatus and appliances, . . . . .	21	805	1,146	+341	+42.36
Electroplating, . . . . .	11	68	36	—32	—47.06
Emery and sand paper and cloth, etc., . . . . .	10	78	143	+65	+83.33
Fancy articles, etc., . . . . .	19	493	503	+10	+2.03
Fertilizers, . . . . .	6	85	90	+5	+5.88
Fine arts and taxidermy, . . . . .	3	3	5	+2	+66.67
Fireworks and matches, . . . . .	4	97	73	—24	—24.74
Flax, hemp, and jute goods, . . . . .	8	140	218	+78	+55.71
Food preparations, . . . . .	347	3,052	3,384	+332	+10.88
Furniture, . . . . .	135	1,767	1,701	—66	—3.74

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## RANGE OF EMPLOYMENT AND UNEMPLOYMENT: BY INDUSTRIES — 1897, 1898 — Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Number	Percent- ages
Glass, . . . . .	13	179	147	—32	—17.88
Glue, isinglass, and starch, . . . .	22	294	286	—8	—2.72
Hair work (animal and human), . . .	4	21	13	—8	—38.10
Hose: rubber, linen, etc., . . . . .	6	660	709	+49	+7.42
Hosiery and knit goods, . . . . .	38	1,464	1,284	—180	—12.30
Ink, mucilage, and paste, . . . . .	7	20	27	+7	+35.00
Ivory, bone, shell, and horn goods, etc., .	19	326	283	—43	—13.19
Jewelry, . . . . .	93	1,349	1,964	+615	+45.59
Leather, . . . . .	95	2,171	2,146	—25	—1.15
Leather goods, . . . . .	30	245	283	+38	+15.51
Liquors (bottled) and carbonated beverages, . . . . .	29	200	176	—24	—12.00
Liquors (malt), . . . . .	31	262	263	+11	+4.37
Liquors (distilled), . . . . .	6	4	6	+2	+50.00
Lumber, . . . . .	29	394	368	—26	—6.60
Machines and machinery, . . . . .	359	6,643	6,196	—447	—6.73
Metals and metallic goods, . . . . .	380	4,864	5,372	+508	+10.44
Models, lasts, and patterns, . . . . .	42	172	168	—4	—2.33
Musical instruments and materials, . . .	64	1,035	862	—173	—16.71
Oils and illuminating fluids, . . . . .	8	45	29	—16	—35.56
Paints, colors, and crude chemicals, . .	29	72	57	—15	—20.83
Paper, . . . . .	80	1,383	1,329	—54	—3.90
Paper goods, . . . . .	34	820	808	—12	—1.46
Perfumes, toilet articles, etc., . . . .	5	10	16	+6	+60.00
Photographs and photographic materials, .	24	78	74	—4	—5.13
Polishes and dressing, . . . . .	26	115	117	+2	+1.74
Printing, publishing, and bookbinding, .	62	980	1,209	+229	+23.37
Print works, dye works, and bleacheries, .	49	1,464	1,434	—30	—2.06
Railroad construction and equipment, . .	16	543	653	+110	+20.26
Rubber and elastic goods, . . . . .	47	2,611	2,612	+1	+0.04
Saddlery and harness, . . . . .	35	107	58	—49	—45.79
Scientific instruments and appliances, . .	20	310	351	+41	+13.23
Shipbuilding, . . . . .	46	680	628	—52	—7.65
Silk and silk goods, . . . . .	11	457	599	+142	+31.07
Sporting and athletic goods, . . . . .	5	124	145	+21	+16.94
Stone, . . . . .	196	3,308	3,051	—257	—7.77
Quarried, . . . . .	51	1,843	1,701	—142	—7.70
Cut and monumental, . . . . .	145	1,465	1,350	—115	—7.85
Straw and palm leaf goods, . . . . .	17	3,846	3,831	—15	—0.39
Tallow, candles, soap, and grease, . . .	66	180	159	—29	—22.31
Tobacco, snuff, and cigars, . . . . .	63	608	781	+173	+28.45
Toys and games (children's), . . . . .	10	299	298	—1	—0.33
Trunks and valises, . . . . .	7	30	17	—13	—43.33
Whips, lashes, and stocks, . . . . .	14	84	138	+54	+64.29
Wooden goods, . . . . .	73	495	514	+19	+3.84
Woollen goods, . . . . .	142	5,017	7,218	+2,201	+43.87
Woven goods and yarn, . . . . .	126	4,881	7,028	+2,147	+43.99
Shoddy, waste, etc., . . . . .	16	136	190	+54	+39.71
Worsteds goods, . . . . .	35	2,386	4,766	+2,380	+99.75
ALL INDUSTRIES, . . . . .	4,701	105,195	114,536	+9,341	+8.88

## PERSONS EMPLOYED: BY INDUSTRIES. AGGREGATES, BY MONTHS.

**1897, 1898.**

[This presentation shows the aggregate number of persons employed, by sex, during each month of the years 1897 and 1898, for all the establishments considered in each industry. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.]

### AGRICULTURAL IMPLEMENTS. [9 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	634	-	634	627	-	627
February, . . . . .	614	-	614	643	-	643
March, . . . . .	598	-	598	641	-	641
April, . . . . .	623	-	623	657	-	657
May, . . . . .	625	-	625	649	-	649
June, . . . . .	562	-	562	640	-	640
July, . . . . .	550	-	550	541	-	541
August, . . . . .	502	-	502	560	-	560
September, . . . . .	572	-	572	583	-	583
October, . . . . .	602	-	602	575	-	575
November, . . . . .	610	-	610	591	-	591
December, . . . . .	592	-	592	641	-	641

### ARMS AND AMMUNITION. [14 Establishments.]

January, . . . . .	1,648	109	1,757	1,217	105	1,322
February, . . . . .	1,683	115	1,798	1,212	101	1,313
March, . . . . .	1,720	116	1,836	1,314	137	1,451
April, . . . . .	1,683	124	1,807	1,395	138	1,533
May, . . . . .	1,481	127	1,608	1,435	144	1,579
June, . . . . .	1,452	128	1,580	1,570	153	1,723
July, . . . . .	989	126	1,115	1,607	154	1,761
August, . . . . .	967	130	1,097	1,429	111	1,540
September, . . . . .	1,192	132	1,324	1,595	148	1,743
October, . . . . .	1,202	141	1,343	1,497	150	1,647
November, . . . . .	1,216	127	1,343	1,510	143	1,653
December, . . . . .	1,182	117	1,299	1,586	127	1,713

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

ARTISANS' TOOLS. [73 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	1,868	55	1,923	1,859	58	1,917
February, . . . . .	1,889	55	1,944	1,931	62	1,993
March, . . . . .	1,889	55	1,944	2,017	64	2,081
April, . . . . .	1,901	56	1,957	2,026	65	2,091
May, . . . . .	1,877	53	1,930	2,005	65	2,070
June, . . . . .	1,861	54	1,915	2,017	65	2,082
July, . . . . .	1,823	48	1,871	1,999	63	2,062
August, . . . . .	1,864	50	1,914	2,014	66	2,080
September, . . . . .	1,894	53	1,947	2,048	67	2,115
October, . . . . .	1,909	49	1,958	2,053	64	2,117
November, . . . . .	1,912	50	1,962	2,041	66	2,107
December, . . . . .	1,914	49	1,963	2,041	64	2,105

AWNINGS, SAILS, TENTS, ETC. [42 Establishments.]

January, . . . . .	127	55	182	134	56	190
February, . . . . .	138	59	197	132	58	190
March, . . . . .	145	64	209	156	70	226
April, . . . . .	155	88	243	171	94	255
May, . . . . .	160	99	259	165	105	270
June, . . . . .	158	88	246	169	119	288
July, . . . . .	188	71	209	153	101	254
August, . . . . .	137	65	202	130	76	206
September, . . . . .	148	58	206	147	66	213
October, . . . . .	172	54	226	173	64	236
November, . . . . .	156	45	201	144	58	202
December, . . . . .	129	44	173	144	59	203

BICYCLES, TRICYCLES, ETC. [18 Establishments.]

January, . . . . .	2,610	65	2,675	2,297	55	2,352
February, . . . . .	2,975	73	3,048	2,392	61	2,453
March, . . . . .	3,212	89	3,301	2,492	72	2,564
April, . . . . .	3,553	97	3,650	2,415	72	2,487
May, . . . . .	2,922	83	3,005	1,995	66	2,061
June, . . . . .	2,321	66	2,387	1,590	50	1,640
July, . . . . .	1,519	47	1,566	1,245	40	1,285
August, . . . . .	1,205	47	1,252	940	32	972
September, . . . . .	1,289	43	1,332	992	36	1,028
October, . . . . .	1,432	48	1,480	1,046	36	1,082
November, . . . . .	1,827	52	1,879	1,485	45	1,530
December, . . . . .	2,155	53	2,208	1,607	58	1,665

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS—1897, 1898—Continued.

## BOOTS AND SHOES. AGGREGATES.\* [644 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	33,762	15,004	48,766	35,571	16,166	51,737
February, . . . . .	34,762	15,897	50,159	36,668	16,835	53,498
March, . . . . .	35,605	15,507	51,112	37,500	17,383	54,883
April, . . . . .	35,099	15,400	50,499	37,174	17,135	54,309
May, . . . . .	34,970	15,425	50,395	35,688	16,234	51,922
June, . . . . .	33,576	14,555	48,131	34,286	15,435	49,721
July, . . . . .	33,254	14,398	47,647	34,586	15,579	50,115
August, . . . . .	35,363	15,591	50,954	35,785	16,389	52,124
September, . . . . .	35,260	16,016	51,276	35,505	16,867	51,872
October, . . . . .	35,449	15,711	51,160	35,410	15,925	51,335
November, . . . . .	34,484	15,321	49,805	34,307	15,486	49,743
December, . . . . .	34,596	15,621	50,217	34,892	15,776	50,668

## BOOTS AND SHOES (FACTORY PRODUCT). [430 Establishments.]

January, . . . . .	30,794	13,498	44,292	32,599	14,572	47,171
February, . . . . .	31,772	13,867	45,639	33,610	15,220	48,830
March, . . . . .	32,566	13,973	46,539	34,433	15,704	50,127
April, . . . . .	32,125	13,876	46,001	34,234	15,509	49,743
May, . . . . .	32,104	13,956	46,060	32,875	14,665	47,540
June, . . . . .	30,813	13,081	43,894	31,628	13,948	45,576
July, . . . . .	30,504	12,929	43,433	31,926	14,170	46,096
August, . . . . .	32,504	14,010	46,514	33,112	14,846	47,958
September, . . . . .	32,354	14,407	46,761	32,820	14,829	47,649
October, . . . . .	32,542	14,088	46,630	32,705	14,397	47,102
November, . . . . .	31,610	13,748	45,358	31,602	13,951	45,553
December, . . . . .	31,700	14,037	45,737	32,056	14,285	46,341

## BOOTS AND SHOES (SOLES, HEELS, AND CUT STOCK). [183 Establishments.]

January, . . . . .	2,568	1,223	3,791	2,576	1,295	3,871
February, . . . . .	2,581	1,242	3,823	2,645	1,299	3,944
March, . . . . .	2,627	1,236	3,863	2,684	1,308	3,992
April, . . . . .	2,570	1,233	3,803	2,591	1,326	3,917
May, . . . . .	2,495	1,189	3,684	2,496	1,279	3,775
June, . . . . .	2,441	1,203	3,644	2,383	1,197	3,580
July, . . . . .	2,461	1,211	3,672	2,333	1,135	3,468
August, . . . . .	2,566	1,284	3,850	2,371	1,186	3,557
September, . . . . .	2,601	1,305	3,906	2,364	1,226	3,590
October, . . . . .	2,581	1,316	3,897	2,370	1,230	3,600
November, . . . . .	2,548	1,264	3,812	2,371	1,178	3,549
December, . . . . .	2,561	1,273	3,834	2,478	1,188	3,666

\* These figures include the persons employed in Boots and Shoes (Factory Product); Soles, Heels, and Cut Stock; Boot and Shoe Findings; and Stitching, Heeling, etc.

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.  
 BOOTS AND SHOES (FINDINGS). [18 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	183	166	349	202	189	391
February, . . . . .	191	171	362	216	197	413
March, . . . . .	186	174	360	204	202	406
April, . . . . .	190	166	356	178	187	365
May, . . . . .	171	156	327	159	188	342
June, . . . . .	168	152	315	158	185	343
July, . . . . .	165	159	324	167	182	349
August, . . . . .	173	173	346	185	189	374
September, . . . . .	175	181	356	191	194	385
October, . . . . .	180	185	365	178	184	362
November, . . . . .	177	187	364	175	190	365
December, . . . . .	172	196	368	186	196	381

BOOTS AND SHOES (STITCHING, HEELING, ETC.). [13 Establishments.]

January, . . . . .	217	117	334	194	110	304
February, . . . . .	218	117	335	192	119	311
March, . . . . .	226	124	350	189	119	308
April, . . . . .	214	125	339	171	118	284
May, . . . . .	200	124	324	158	107	265
June, . . . . .	159	119	278	117	105	222
July, . . . . .	124	94	218	110	92	202
August, . . . . .	120	124	244	117	118	235
September, . . . . .	130	123	253	130	118	248
October, . . . . .	146	122	268	157	114	271
November, . . . . .	149	122	271	159	117	276
December, . . . . .	163	115	278	172	108	280

BOXES, BARRELS, KEGS, ETC. [122 Establishments.]

January, . . . . .	2,207	431	2,638	2,234	436	2,670
February, . . . . .	2,217	435	2,652	2,243	447	2,690
March, . . . . .	2,274	463	2,737	2,301	477	2,778
April, . . . . .	2,335	466	2,801	2,276	461	2,737
May, . . . . .	2,303	477	2,780	2,274	466	2,740
June, . . . . .	2,210	461	2,671	2,192	440	2,632
July, . . . . .	2,048	441	2,489	2,070	431	2,501
August, . . . . .	2,082	426	2,458	2,056	423	2,479
September, . . . . .	2,086	443	2,529	2,094	436	2,530
October, . . . . .	2,058	466	2,524	2,149	455	2,604
November, . . . . .	2,181	453	2,634	2,175	452	2,627
December, . . . . .	2,233	444	2,677	2,241	453	2,694



PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## BOXES (PAPER). [62 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	498	1,199	1,697	501	1,242	1,743
February, . . . . .	505	1,207	1,712	506	1,246	1,752
March, . . . . .	518	1,225	1,743	521	1,296	1,817
April, . . . . .	518	1,250	1,768	506	1,251	1,757
May, . . . . .	527	1,242	1,769	508	1,265	1,773
June, . . . . .	512	1,209	1,721	504	1,226	1,730
July, . . . . .	479	1,152	1,631	479	1,221	1,700
August, . . . . .	478	1,148	1,626	480	1,177	1,657
September, . . . . .	482	1,238	1,720	498	1,237	1,735
October, . . . . .	491	1,297	1,788	512	1,315	1,827
November, . . . . .	502	1,311	1,813	528	1,338	1,866
December, . . . . .	490	1,314	1,804	540	1,361	1,901

## BRICK, TILES, AND SEWER PIPE. [56 Establishments.]

January, . . . . .	639	5	644	435	2	437
February, . . . . .	635	5	640	437	2	439
March, . . . . .	698	5	698	480	2	482
April, . . . . .	1,365	5	1,370	937	2	939
May, . . . . .	2,158	5	2,158	1,861	2	1,863
June, . . . . .	2,237	3	2,240	2,105	4	2,109
July, . . . . .	2,260	3	2,263	2,013	4	2,017
August, . . . . .	2,176	1	2,177	1,976	2	1,978
September, . . . . .	2,024	3	2,027	1,820	2	1,822
October, . . . . .	1,555	3	1,558	1,442	3	1,445
November, . . . . .	908	3	911	842	4	846
December, . . . . .	611	3	614	518	2	520

## BROOMS, BRUSHES, AND MOPS. [23 Establishments.]

January, . . . . .	387	388	775	404	379	783
February, . . . . .	377	390	767	411	377	788
March, . . . . .	366	394	760	411	388	799
April, . . . . .	372	381	753	408	402	810
May, . . . . .	370	361	731	398	398	796
June, . . . . .	362	368	730	396	392	788
July, . . . . .	349	335	684	374	355	729
August, . . . . .	341	340	681	371	363	734
September, . . . . .	351	364	715	391	391	782
October, . . . . .	377	379	756	407	400	807
November, . . . . .	393	394	787	423	416	839
December, . . . . .	388	396	784	426	422	848

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.  
 BUILDING MATERIALS. [57 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	1,205	2	1,207	1,225	2	1,227
February, . . . . .	1,187	4	1,191	1,258	2	1,260
March, . . . . .	1,177	4	1,181	1,253	2	1,255
April, . . . . .	1,222	4	1,226	1,274	2	1,276
May, . . . . .	1,243	5	1,248	1,302	2	1,304
June, . . . . .	1,282	4	1,286	1,297	2	1,299
July, . . . . .	1,366	5	1,371	1,308	2	1,310
August, . . . . .	1,405	5	1,410	1,286	2	1,288
September, . . . . .	1,338	2	1,336	1,279	2	1,281
October, . . . . .	1,404	2	1,406	1,288	2	1,290
November, . . . . .	1,351	2	1,353	1,255	2	1,257
December, . . . . .	1,266	2	1,268	1,262	2	1,264

BURIAL CASES, CASKETS, COFFINS, ETC. [6 Establishments.]

January, . . . . .	160	21	181	165	21	186
February, . . . . .	160	21	181	166	22	188
March, . . . . .	164	21	185	160	23	183
April, . . . . .	170	23	193	159	23	182
May, . . . . .	169	23	192	154	24	178
June, . . . . .	167	23	190	157	23	180
July, . . . . .	166	20	186	156	22	178
August, . . . . .	159	20	179	155	23	178
September, . . . . .	161	20	181	150	22	172
October, . . . . .	160	21	181	153	22	175
November, . . . . .	163	21	184	152	22	174
December, . . . . .	163	21	184	155	21	176

BUTTONS AND DRESS TRIMMINGS. [13 Establishments.]

January, . . . . .	275	384	659	346	645	991
February, . . . . .	279	377	656	343	625	968
March, . . . . .	296	424	720	329	618	947
April, . . . . .	305	494	799	314	543	862
May, . . . . .	313	502	815	280	490	770
June, . . . . .	342	485	827	266	441	707
July, . . . . .	343	465	808	259	411	670
August, . . . . .	344	461	805	274	440	714
September, . . . . .	360	531	891	280	487	767
October, . . . . .	382	607	989	291	531	822
November, . . . . .	390	629	1,019	299	546	845
December, . . . . .	350	564	914	324	535	859

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.  
 CARPETINGS. AGGREGATES.\* [12 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	2,222	2,297	4,519	2,248	2,148	4,396
February, . . . . .	2,249	2,438	4,687	2,276	2,344	4,620
March, . . . . .	2,214	2,388	4,597	2,189	2,235	4,424
April, . . . . .	2,264	2,392	4,656	1,978	1,753	3,731
May, . . . . .	2,291	2,436	4,727	1,908	1,625	3,533
June, . . . . .	2,273	2,405	4,678	2,081	1,833	3,914
July, . . . . .	2,271	2,377	4,648	2,128	2,114	4,242
August, . . . . .	2,280	2,361	4,641	2,080	2,040	4,120
September, . . . . .	2,232	2,430	4,662	2,001	2,042	4,043
October, . . . . .	2,247	2,351	4,598	2,090	2,073	4,163
November, . . . . .	2,257	2,251	4,508	2,268	2,348	4,616
December, . . . . .	2,315	2,237	4,552	2,308	2,448	4,756

CARPETINGS (TEXTILE). [8 Establishments.]

January, . . . . .	2,136	2,255	4,391	2,140	2,078	4,218
February, . . . . .	2,162	2,399	4,561	2,172	2,173	4,345
March, . . . . .	2,132	2,342	4,474	2,068	2,176	4,244
April, . . . . .	2,184	2,345	4,529	1,886	1,692	3,578
May, . . . . .	2,201	2,386	4,587	1,810	1,561	3,371
June, . . . . .	2,133	2,360	4,493	1,966	1,768	3,734
July, . . . . .	2,185	2,340	4,525	2,035	2,037	4,072
August, . . . . .	2,189	2,312	4,501	1,976	1,959	3,935
September, . . . . .	2,136	2,365	4,501	1,898	1,954	3,852
October, . . . . .	2,133	2,270	4,403	1,984	1,973	3,957
November, . . . . .	2,150	2,177	4,327	2,161	2,241	4,402
December, . . . . .	2,205	2,181	4,386	2,198	2,359	4,557

CARPETINGS (OTHER). [4 Establishments.]

January, . . . . .	86	42	128	108	70	178
February, . . . . .	87	39	126	104	71	175
March, . . . . .	82	41	123	96	59	155
April, . . . . .	80	47	127	92	61	153
May, . . . . .	90	50	140	98	64	162
June, . . . . .	90	45	135	95	65	160
July, . . . . .	86	37	123	93	77	170
August, . . . . .	91	49	140	104	81	185
September, . . . . .	96	65	161	103	88	191
October, . . . . .	109	81	190	106	100	206
November, . . . . .	107	74	181	107	107	214
December, . . . . .	110	76	186	110	89	199

\* These figures include the persons employed in Carpetings (Textile) and Carpetings (Other).

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## CARRIAGES AND WAGONS. [136 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	1,882	14	1,896	1,785	11	1,796
February, . . . . .	1,978	14	1,992	1,865	12	1,877
March, . . . . .	2,118	14	2,132	2,071	13	2,084
April, . . . . .	2,360	11	2,371	2,196	13	2,209
May, . . . . .	2,278	12	2,290	2,196	12	2,208
June, . . . . .	2,191	11	2,202	2,117	12	2,129
July, . . . . .	1,832	9	1,841	1,890	10	1,900
August, . . . . .	1,692	9	1,701	1,711	9	1,720
September, . . . . .	1,667	11	1,678	1,646	10	1,656
October, . . . . .	1,670	10	1,680	1,653	12	1,665
November, . . . . .	1,669	10	1,679	1,655	16	1,671
December, . . . . .	1,745	11	1,756	1,686	18	1,704

## CEMENT, KAOLIN, LIME, AND PLASTER. [9 Establishments.]

January, . . . . .	99	—	99	91	—	91
February, . . . . .	91	—	91	104	—	104
March, . . . . .	115	—	115	117	—	117
April, . . . . .	129	—	129	140	—	140
May, . . . . .	145	—	145	147	—	147
June, . . . . .	134	—	134	136	—	136
July, . . . . .	144	—	144	147	—	147
August, . . . . .	142	—	142	140	—	140
September, . . . . .	139	—	139	136	—	136
October, . . . . .	145	—	145	145	—	145
November, . . . . .	138	—	138	141	—	141
December, . . . . .	114	—	114	92	—	92

## CHEMICAL PREPARATIONS (COMPOUNDED). [15 Establishments.]

January, . . . . .	414	12	426	418	13	431
February, . . . . .	408	13	421	415	13	428
March, . . . . .	427	12	439	438	14	452
April, . . . . .	414	13	427	422	14	436
May, . . . . .	440	15	455	430	14	444
June, . . . . .	445	13	458	420	14	434
July, . . . . .	447	13	460	408	13	421
August, . . . . .	444	13	457	389	13	402
September, . . . . .	444	14	458	388	13	401
October, . . . . .	457	14	471	397	15	412
November, . . . . .	452	14	466	410	13	423
December, . . . . .	431	14	445	427	13	440

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## CLOCKS AND WATCHES. [12 Establishments.]

Months.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	1,159	1,134	2,293	1,046	1,240	2,286
February, . . . . .	1,149	1,157	2,306	1,060	1,252	2,312
March, . . . . .	1,145	1,166	2,311	1,070	1,306	2,376
April, . . . . .	1,131	1,167	2,298	1,058	1,297	2,355
May, . . . . .	1,134	1,176	2,310	1,016	1,295	2,311
June, . . . . .	1,132	1,172	2,304	1,018	1,309	2,327
July, . . . . .	287	85	372	990	1,265	2,255
August, . . . . .	1,042	1,214	2,256	996	1,310	2,306
September, . . . . .	1,142	1,270	2,412	1,067	1,367	2,434
October, . . . . .	1,164	1,282	2,446	1,094	1,395	2,489
November, . . . . .	1,173	1,285	2,458	1,127	1,430	2,557
December, . . . . .	1,198	1,283	2,476	1,143	1,427	2,570

## CLOTHING. [152 Establishments.]

January, . . . . .	2,558	6,007	8,565	2,702	6,291	8,993
February, . . . . .	2,595	6,387	8,982	2,759	6,643	9,402
March, . . . . .	2,668	6,738	9,406	2,774	6,919	9,693
April, . . . . .	2,695	6,818	9,513	2,802	6,865	9,667
May, . . . . .	2,709	6,751	9,460	2,717	6,587	9,304
June, . . . . .	2,770	6,437	9,207	2,659	6,280	8,939
July, . . . . .	2,807	5,692	8,499	2,730	5,998	8,728
August, . . . . .	2,827	5,581	8,408	2,761	5,881	8,642
September, . . . . .	2,906	6,610	9,516	2,869	6,504	9,373
October, . . . . .	2,960	6,911	9,871	2,966	7,044	10,010
November, . . . . .	2,909	6,697	9,606	2,845	6,989	9,834
December, . . . . .	2,817	6,280	9,097	2,769	6,771	9,540

## COOKING, LIGHTING, AND HEATING APPARATUS. [43 Establishments.]

January, . . . . .	1,489	4	1,493	1,480	7	1,487
February, . . . . .	1,461	5	1,466	1,490	7	1,497
March, . . . . .	1,591	4	1,595	1,626	7	1,633
April, . . . . .	1,618	4	1,622	1,616	8	1,624
May, . . . . .	1,645	4	1,649	1,587	8	1,575
June, . . . . .	1,653	4	1,657	1,486	8	1,494
July, . . . . .	1,527	5	1,532	1,427	7	1,434
August, . . . . .	1,687	5	1,692	1,595	6	1,601
September, . . . . .	1,801	5	1,806	1,705	6	1,711
October, . . . . .	1,909	5	1,914	1,781	6	1,787
November, . . . . .	1,838	5	1,843	1,729	6	1,735
December, . . . . .	1,744	5	1,749	1,688	8	1,696

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## CORDAGE AND TWINE. [23 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	1,074	684	1,758	1,248	728	1,976
February, . . . . .	1,068	690	1,758	1,251	695	1,946
March, . . . . .	1,087	749	1,836	1,254	756	2,010
April, . . . . .	1,155	804	1,959	1,310	737	2,037
May, . . . . .	1,218	801	2,019	1,382	711	2,043
June, . . . . .	1,181	732	1,913	1,398	695	2,098
July, . . . . .	1,179	706	1,885	1,391	751	2,142
August, . . . . .	1,138	671	1,804	1,187	647	1,784
September, . . . . .	1,138	695	1,833	1,141	671	1,812
October, . . . . .	1,194	721	1,915	1,188	708	1,891
November, . . . . .	1,213	707	1,920	1,198	697	1,895
December, . . . . .	1,200	694	1,894	1,154	668	1,817

## COTTON GOODS. AGGREGATES.\* [169 Establishments.]

January, . . . . .	42,473	41,446	83,919	40,459	40,286	80,745
February, . . . . .	41,239	40,055	81,294	38,253	37,708	75,956
March, . . . . .	41,576	40,355	81,931	38,734	38,225	76,959
April, . . . . .	41,511	40,454	81,965	40,149	39,812	79,961
May, . . . . .	41,460	40,882	82,342	41,184	39,893	81,077
June, . . . . .	40,849	40,235	81,084	42,102	40,799	82,901
July, . . . . .	39,837	38,237	78,074	42,108	39,856	81,959
August, . . . . .	37,830	35,649	73,479	42,197	39,714	81,911
September, . . . . .	41,345	40,621	81,966	42,265	39,904	82,069
October, . . . . .	41,664	41,141	82,805	43,062	41,276	84,338
November, . . . . .	41,890	41,221	83,111	42,688	41,339	84,027
December, . . . . .	41,370	40,862	82,232	42,762	41,835	84,597

## COTTON GOODS (WOVEN). [120 Establishments.]

January, . . . . .	37,842	36,705	74,547	35,425	34,962	70,387
February, . . . . .	36,684	35,352	72,036	33,279	32,333	65,612
March, . . . . .	36,998	35,663	72,661	33,662	32,741	66,403
April, . . . . .	36,992	35,721	72,713	35,046	34,366	69,412
May, . . . . .	37,059	36,162	73,221	36,167	34,586	70,753
June, . . . . .	36,458	35,573	72,031	37,231	35,619	72,850
July, . . . . .	35,451	33,574	69,025	37,219	34,714	71,933
August, . . . . .	33,387	30,968	64,355	37,271	34,628	71,899
September, . . . . .	36,796	35,767	72,563	37,340	34,664	72,004
October, . . . . .	37,021	36,202	73,223	38,122	35,954	74,076
November, . . . . .	37,227	36,196	73,423	37,747	36,067	73,894
December, . . . . .	37,013	36,140	73,153	37,845	36,478	74,318

\* These figures include the persons employed in Cotton Goods (Woven); Cotton Yarn and Thread; and Cotton Waste.

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## COTTON GOODS (YARN AND THREAD). [41 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	4,400	4,614	9,014	4,788	5,198	9,976
February, . . . . .	4,321	4,588	8,904	4,720	5,236	9,956
March, . . . . .	4,347	4,571	8,918	4,818	5,347	10,165
April, . . . . .	4,288	4,605	8,888	4,888	5,309	10,147
May, . . . . .	4,167	4,594	8,761	4,752	5,170	9,922
June, . . . . .	4,151	4,542	8,693	4,605	5,045	9,650
July, . . . . .	4,151	4,540	8,691	4,627	5,006	9,633
August, . . . . .	4,196	4,556	8,752	4,661	4,951	9,612
September, . . . . .	4,301	4,721	9,022	4,664	5,009	9,673
October, . . . . .	4,382	4,808	9,190	4,668	5,189	9,857
November, . . . . .	4,416	4,895	9,311	4,681	5,131	9,812
December, . . . . .	4,108	4,600	8,708	4,658	5,241	9,899

## COTTON GOODS (WASTE). [8 Establishments.]

January, . . . . .	231	127	358	251	131	382
February, . . . . .	234	120	354	254	134	388
March, . . . . .	231	121	352	254	137	391
April, . . . . .	236	128	364	265	137	402
May, . . . . .	234	126	360	265	137	402
June, . . . . .	240	120	360	266	135	401
July, . . . . .	235	123	358	257	136	393
August, . . . . .	247	125	372	265	135	400
September, . . . . .	248	133	381	261	131	392
October, . . . . .	261	131	392	272	133	405
November, . . . . .	247	130	377	260	121	381
December, . . . . .	249	122	371	259	121	380

## CRAYONS, CRUCIBLES, PENCILS, ETC. [3 Establishments.]

January, . . . . .	20	28	48	26	30	56
February, . . . . .	21	24	45	24	25	49
March, . . . . .	20	22	42	22	20	42
April, . . . . .	20	22	42	22	14	36
May, . . . . .	21	22	43	22	26	48
June, . . . . .	21	22	43	25	40	65
July, . . . . .	24	34	58	28	45	73
August, . . . . .	23	34	57	28	67	95
September, . . . . .	22	29	51	32	45	77
October, . . . . .	24	33	57	34	45	79
November, . . . . .	20	19	39	32	40	72
December, . . . . .	20	23	43	32	28	60

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

DRUGS AND MEDICINES. [25 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	289	287	576	288	332	620
February, . . . . .	289	334	623	284	323	607
March, . . . . .	279	309	588	296	332	628
April, . . . . .	285	301	586	289	296	585
May, . . . . .	277	281	558	271	273	544
June, . . . . .	274	276	550	293	269	562
July, . . . . .	281	267	548	293	253	546
August, . . . . .	274	210	484	286	243	529
September, . . . . .	288	274	562	284	278	562
October, . . . . .	276	318	594	290	323	613
November, . . . . .	274	320	594	305	343	648
December, . . . . .	287	334	621	289	328	617

DYESTUFFS. [6 Establishments.]

January, . . . . .	88	43	131	79	63	142
February, . . . . .	85	45	130	84	63	147
March, . . . . .	84	45	129	94	64	158
April, . . . . .	85	41	126	98	64	157
May, . . . . .	81	40	121	83	63	146
June, . . . . .	81	40	121	86	37	123
July, . . . . .	59	24	83	63	37	100
August, . . . . .	80	24	104	81	20	101
September, . . . . .	86	40	126	86	20	106
October, . . . . .	92	41	133	87	38	125
November, . . . . .	99	56	155	86	37	122
December, . . . . .	97	56	153	86	63	149

EARTHEN, PLASTER, AND STONE WARE. [6 Establishments.]

January, . . . . .	148	21	169	161	34	195
February, . . . . .	150	22	172	165	34	199
March, . . . . .	158	24	182	168	34	202
April, . . . . .	159	29	188	165	34	199
May, . . . . .	163	28	191	169	37	206
June, . . . . .	158	27	185	171	37	208
July, . . . . .	164	30	194	177	37	214
August, . . . . .	179	28	207	170	37	207
September, . . . . .	179	35	214	169	41	210
October, . . . . .	173	38	211	167	41	208
November, . . . . .	176	33	209	168	41	209
December, . . . . .	174	32	206	167	40	207



## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## ELECTRICAL APPARATUS AND APPLIANCES. [21 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	2,413	455	2,868	2,487	535	3,022
February, . . . . .	2,401	444	2,845	2,654	533	3,187
March, . . . . .	2,371	454	2,825	2,807	513	3,320
April, . . . . .	2,344	417	2,761	2,975	537	3,512
May, . . . . .	2,427	395	2,822	3,037	549	3,586
June, . . . . .	2,511	410	2,921	2,963	544	3,527
July, . . . . .	2,533	403	2,936	2,986	535	3,521
August, . . . . .	2,501	396	2,897	2,961	557	3,518
September, . . . . .	2,465	402	2,867	2,959	609	3,568
October, . . . . .	2,511	493	3,004	2,995	659	3,654
November, . . . . .	2,623	528	3,151	3,075	686	3,761
December, . . . . .	2,735	574	3,309	3,108	654	3,762

## ELECTROPLATING. [11 Establishments.]

January, . . . . .	100	5	105	99	5	104
February, . . . . .	110	5	115	96	5	101
March, . . . . .	123	5	128	98	5	103
April, . . . . .	117	5	122	103	5	108
May, . . . . .	117	5	122	106	5	113
June, . . . . .	105	5	110	96	5	101
July, . . . . .	85	5	90	93	5	98
August, . . . . .	90	5	95	94	5	99
September, . . . . .	97	5	102	99	4	103
October, . . . . .	109	5	114	106	6	112
November, . . . . .	107	5	112	104	6	110
December, . . . . .	106	5	111	101	6	107

## EMERY AND SAND PAPER AND CLOTH, ETC. [10 Establishments.]

January, . . . . .	322	2	324	403	-	403
February, . . . . .	320	2	322	410	-	410
March, . . . . .	329	2	331	410	-	410
April, . . . . .	324	2	326	424	-	424
May, . . . . .	330	3	333	425	-	425
June, . . . . .	337	3	340	421	-	421
July, . . . . .	337	3	340	409	-	409
August, . . . . .	331	3	334	391	-	391
September, . . . . .	339	3	342	425	-	425
October, . . . . .	351	3	354	472	-	472
November, . . . . .	350	3	353	471	-	471
December, . . . . .	357	3	360	467	-	467

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

FANCY ARTICLES, ETC. [19 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	131	261	392	149	213	362
February, . . . . .	98	159	257	113	156	269
March, . . . . .	104	135	239	102	113	215
April, . . . . .	109	148	257	116	150	266
May, . . . . .	107	152	259	116	158	274
June, . . . . .	102	164	266	124	176	300
July, . . . . .	96	175	271	106	180	286
August, . . . . .	107	231	338	115	198	308
September, . . . . .	136	289	425	136	269	405
October, . . . . .	155	302	457	162	321	483
November, . . . . .	163	299	462	173	378	551
December, . . . . .	154	280	434	181	360	541

FERTILIZERS. [6 Establishments.]

January, . . . . .	188	-	188	207	-	207
February, . . . . .	206	-	206	217	-	217
March, . . . . .	238	-	238	244	-	244
April, . . . . .	240	-	240	271	-	271
May, . . . . .	200	-	200	213	-	213
June, . . . . .	188	-	188	194	-	194
July, . . . . .	176	-	176	195	-	195
August, . . . . .	178	-	178	195	-	195
September, . . . . .	180	-	180	201	-	201
October, . . . . .	185	-	185	202	-	202
November, . . . . .	191	-	191	199	-	199
December, . . . . .	200	-	200	207	-	207

FINE ARTS AND TAXIDERM. [3 Establishments.]

January, . . . . .	13	1	14	16	1	17
February, . . . . .	13	1	14	16	1	17
March, . . . . .	11	1	12	15	1	16
April, . . . . .	11	1	12	15	1	16
May, . . . . .	11	1	12	15	1	16
June, . . . . .	11	1	12	15	1	16
July, . . . . .	11	1	12	15	1	16
August, . . . . .	11	1	12	15	1	16
September, . . . . .	14	1	15	17	1	18
October, . . . . .	11	1	12	18	1	19
November, . . . . .	14	1	15	18	1	19
December, . . . . .	14	1	15	20	1	21

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.  
 FIREWORKS AND MATCHES. [4 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	70	30	100	67	33	100
February, . . . . .	71	33	104	69	30	99
March, . . . . .	71	31	102	72	32	104
April, . . . . .	85	33	118	61	30	91
May, . . . . .	87	33	120	62	28	90
June, . . . . .	88	32	120	72	27	99
July, . . . . .	33	15	48	40	19	59
August, . . . . .	43	25	68	44	25	69
September, . . . . .	52	25	77	55	21	76
October, . . . . .	67	31	98	64	29	93
November, . . . . .	68	32	100	63	33	96
December, . . . . .	69	32	101	66	33	99

FLAX, HEMP, AND JUTE GOODS. [8 Establishments.]

January, . . . . .	526	720	1,246	528	753	1,281
February, . . . . .	525	739	1,264	526	757	1,283
March, . . . . .	525	732	1,257	545	760	1,305
April, . . . . .	520	750	1,270	543	773	1,316
May, . . . . .	524	750	1,274	544	762	1,306
June, . . . . .	521	760	1,281	552	776	1,328
July, . . . . .	519	762	1,281	552	777	1,329
August, . . . . .	515	757	1,272	551	774	1,325
September, . . . . .	511	769	1,280	538	754	1,292
October, . . . . .	522	770	1,292	518	764	1,282
November, . . . . .	509	776	1,285	483	687	1,170
December, . . . . .	516	766	1,282	480	674	1,154

FOOD PREPARATIONS. [347 Establishments.]

January, . . . . .	6,434	2,222	8,656	6,698	2,343	9,041
February, . . . . .	6,681	2,270	8,951	6,941	2,348	9,289
March, . . . . .	6,435	2,269	8,704	6,677	2,354	9,031
April, . . . . .	6,230	2,226	8,456	6,376	2,289	8,665
May, . . . . .	6,297	2,290	8,587	6,324	2,296	8,620
June, . . . . .	6,375	2,387	8,762	6,354	2,360	8,714
July, . . . . .	6,395	2,292	8,687	6,453	2,376	8,829
August, . . . . .	6,398	2,247	8,645	6,414	2,303	8,717
September, . . . . .	6,617	2,591	9,208	6,636	2,692	9,328
October, . . . . .	6,783	2,708	9,491	6,855	2,912	9,767
November, . . . . .	6,761	2,716	9,477	6,978	2,960	9,938
December, . . . . .	6,770	2,696	9,466	7,084	2,881	9,915

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## FURNITURE. [135 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	4,459	522	4,981	4,604	575	5,179
February, . . . . .	4,592	588	5,175	4,689	609	5,298
March, . . . . .	4,720	612	5,332	4,807	620	5,427
April, . . . . .	4,726	622	5,348	4,774	612	5,386
May, . . . . .	4,707	654	5,361	4,694	611	5,305
June, . . . . .	4,692	656	5,348	4,594	623	5,217
July, . . . . .	4,427	588	4,965	4,397	574	4,971
August, . . . . .	4,458	587	5,045	4,663	545	5,208
September, . . . . .	4,682	591	5,273	4,695	581	5,276
October, . . . . .	4,985	653	5,588	4,988	608	5,541
November, . . . . .	4,992	630	5,622	4,975	619	5,594
December, . . . . .	4,873	593	5,466	4,852	601	5,453

## GLASS. [13 Establishments.]

January, . . . . .	266	14	280	243	12	255
February, . . . . .	263	15	278	253	13	266
March, . . . . .	258	14	272	261	14	275
April, . . . . .	256	12	268	281	16	297
May, . . . . .	275	14	289	264	16	280
June, . . . . .	253	18	271	251	13	264
July, . . . . .	248	15	263	247	13	260
August, . . . . .	245	14	259	172	9	181
September, . . . . .	182	7	189	177	9	186
October, . . . . .	264	14	278	178	9	187
November, . . . . .	285	15	300	283	16	299
December, . . . . .	292	14	306	288	16	304

## GLUE, ISINGLASS, AND STARCH. [22 Establishments.]

January, . . . . .	546	56	602	582	54	586
February, . . . . .	561	58	619	588	62	600
March, . . . . .	478	58	536	507	61	568
April, . . . . .	388	42	430	383	46	429
May, . . . . .	379	43	422	325	45	370
June, . . . . .	316	40	356	252	44	296
July, . . . . .	263	21	284	255	28	283
August, . . . . .	240	17	257	247	16	263
September, . . . . .	256	20	276	250	19	269
October, . . . . .	377	33	410	356	42	398
November, . . . . .	381	41	422	375	42	417
December, . . . . .	516	55	571	488	44	482

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## HAIR WORK (ANIMAL AND HUMAN). [4 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	58	69	127	52	55	107
February, . . . . .	60	70	130	52	55	107
March, . . . . .	60	74	134	51	55	106
April, . . . . .	60	78	138	51	57	108
May, . . . . .	64	77	141	50	55	105
June, . . . . .	64	76	140	50	55	105
July, . . . . .	65	74	139	50	53	103
August, . . . . .	65	66	131	50	52	102
September, . . . . .	62	66	128	51	53	104
October, . . . . .	63	68	131	50	51	101
November, . . . . .	63	61	124	49	49	98
December, . . . . .	61	59	120	49	49	98

## HOSE: RUBBER, LINEN, ETC. [6 Establishments.]

January, . . . . .	545	204	749	586	94	680
February, . . . . .	712	292	1,004	653	141	794
March, . . . . .	692	238	930	707	167	874
April, . . . . .	796	261	1,057	749	206	955
May, . . . . .	704	212	916	459	141	600
June, . . . . .	571	161	732	287	68	355
July, . . . . .	370	91	461	280	67	347
August, . . . . .	349	58	407	266	50	316
September, . . . . .	351	59	410	248	40	288
October, . . . . .	428	83	511	241	46	287
November, . . . . .	451	90	541	219	38	257
December, . . . . .	463	97	560	237	53	290

## HOSIERY AND KNIT GOODS. [38 Establishments.]

January, . . . . .	1,565	3,781	5,346	1,647	4,024	5,671
February, . . . . .	1,522	3,721	5,243	1,631	4,113	5,744
March, . . . . .	1,585	3,792	5,377	1,648	4,138	5,841
April, . . . . .	1,602	3,831	5,433	1,682	4,222	5,904
May, . . . . .	1,587	3,778	5,365	1,634	4,104	5,738
June, . . . . .	1,548	3,696	5,244	1,603	4,089	5,642
July, . . . . .	1,513	3,569	5,082	1,612	4,009	5,621
August, . . . . .	681	1,381	2,062	1,633	4,012	5,645
September, . . . . .	1,524	3,722	5,246	1,655	4,117	5,772
October, . . . . .	1,671	3,975	5,646	1,701	4,254	5,955
November, . . . . .	1,678	4,111	5,789	1,744	4,427	6,171
December, . . . . .	1,651	3,979	5,630	1,728	4,365	6,093

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.  
 INK, MUCILAGE, AND PASTE. [7 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	33	20	53	34	20	54
February, . . . . .	38	21	59	39	23	62
March, . . . . .	43	28	71	44	29	73
April, . . . . .	43	28	71	45	29	74
May, . . . . .	45	26	71	47	28	75
June, . . . . .	39	24	63	41	26	67
July, . . . . .	38	20	58	41	22	63
August, . . . . .	39	23	62	41	24	65
September, . . . . .	42	24	66	44	29	73
October, . . . . .	40	27	67	40	32	72
November, . . . . .	38	25	63	41	39	80
December, . . . . .	33	22	55	36	27	63

IVORY, BONE, SHELL, AND HORN GOODS, ETC. [19 Establishments.]

January, . . . . .	657	138	795	743	157	900
February, . . . . .	683	146	829	768	166	934
March, . . . . .	703	143	846	817	169	986
April, . . . . .	646	139	785	749	160	909
May, . . . . .	615	141	756	690	144	834
June, . . . . .	588	143	731	701	144	845
July, . . . . .	601	136	737	698	140	838
August, . . . . .	606	136	744	744	142	886
September, . . . . .	665	133	798	808	150	953
October, . . . . .	705	146	851	833	155	988
November, . . . . .	678	134	812	827	154	981
December, . . . . .	647	136	783	839	153	992

JEWELRY. [93 Establishments.]

January, . . . . .	2,080	1,017	3,097	2,433	1,207	3,640
February, . . . . .	2,074	1,008	3,077	2,458	1,226	3,684
March, . . . . .	2,065	1,051	3,116	2,420	1,231	3,651
April, . . . . .	1,985	1,013	2,998	2,223	1,106	3,329
May, . . . . .	1,926	954	2,880	2,134	1,112	3,246
June, . . . . .	2,000	1,009	3,009	2,303	1,241	3,544
July, . . . . .	1,907	978	2,885	2,369	1,249	3,618
August, . . . . .	1,980	943	2,923	2,418	1,269	3,687
September, . . . . .	2,132	998	3,130	2,635	1,337	4,022
October, . . . . .	2,379	1,071	3,450	2,914	1,508	4,422
November, . . . . .	2,436	1,104	3,540	2,896	1,501	4,397
December, . . . . .	2,432	1,104	3,536	2,873	1,482	4,355

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

LEATHER. [95 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	5,360	34	5,394	5,682	27	5,709
February, . . . . .	5,465	38	5,508	5,640	28	5,668
March, . . . . .	5,470	35	5,505	5,919	30	5,949
April, . . . . .	5,453	26	5,479	5,883	26	5,859
May, . . . . .	5,485	25	5,510	5,584	20	5,604
June, . . . . .	5,441	21	5,462	5,390	21	5,411
July, . . . . .	5,458	18	5,476	5,257	20	5,277
August, . . . . .	5,669	28	5,697	5,306	24	5,230
September, . . . . .	5,679	30	5,709	5,269	24	5,298
October, . . . . .	5,814	32	5,846	5,080	21	5,101
November, . . . . .	5,841	31	5,872	5,138	28	5,166
December, . . . . .	5,669	27	5,696	5,221	36	5,237

LEATHER GOODS. [30 Establishments.]

January, . . . . .	665	250	915	705	283	988
February, . . . . .	677	244	921	719	287	1,006
March, . . . . .	673	261	924	741	296	1,039
April, . . . . .	677	246	923	736	290	1,026
May, . . . . .	679	253	932	729	273	1,002
June, . . . . .	685	237	922	725	265	990
July, . . . . .	612	226	838	749	254	1,003
August, . . . . .	611	225	836	741	255	996
September, . . . . .	654	232	886	710	266	976
October, . . . . .	685	243	928	726	276	1,002
November, . . . . .	682	250	932	721	291	1,012
December, . . . . .	690	237	927	738	278	1,016

LIQUORS (BOTTLED) AND CARBONATED BEVERAGES. [29 Establishments.]

January, . . . . .	225	3	228	222	3	225
February, . . . . .	229	2	231	226	3	229
March, . . . . .	231	2	233	231	5	236
April, . . . . .	253	2	260	255	4	259
May, . . . . .	312	2	314	304	4	308
June, . . . . .	353	2	355	344	4	348
July, . . . . .	410	3	413	380	5	385
August, . . . . .	361	3	364	359	5	364
September, . . . . .	326	3	329	324	4	328
October, . . . . .	259	3	262	266	4	270
November, . . . . .	240	3	243	241	4	245
December, . . . . .	235	3	238	233	4	237

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.  
 LIQUORS (MALT). [31 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	1,405	—	1,405	1,451	—	1,451
February, . . . . .	1,413	—	1,413	1,472	—	1,472
March, . . . . .	1,440	—	1,440	1,504	—	1,504
April, . . . . .	1,463	—	1,463	1,510	—	1,510
May, . . . . .	1,503	—	1,503	1,535	—	1,535
June, . . . . .	1,548	—	1,548	1,567	—	1,567
July, . . . . .	1,580	—	1,580	1,579	—	1,579
August, . . . . .	1,586	—	1,586	1,572	—	1,572
September, . . . . .	1,571	—	1,571	1,540	—	1,540
October, . . . . .	1,546	—	1,546	1,504	—	1,504
November, . . . . .	1,496	—	1,496	1,469	—	1,469
December, . . . . .	1,495	—	1,495	1,448	—	1,448

LIQUORS (DISTILLED). [6 Establishments.]

January, . . . . .	32	—	32	29	—	29
February, . . . . .	32	—	32	29	—	29
March, . . . . .	32	—	32	29	—	29
April, . . . . .	32	—	32	26	—	26
May, . . . . .	29	—	29	26	—	26
June, . . . . .	29	—	29	26	—	26
July, . . . . .	28	—	28	23	—	23
August, . . . . .	28	—	28	23	—	23
September, . . . . .	28	—	28	23	—	23
October, . . . . .	28	—	28	23	—	23
November, . . . . .	31	—	31	29	—	29
December, . . . . .	31	—	31	29	—	29

LUMBER. [29 Establishments.]

January, . . . . .	614	6	620	760	6	766
February, . . . . .	587	6	593	713	6	719
March, . . . . .	584	6	590	756	9	765
April, . . . . .	768	9	777	741	9	750
May, . . . . .	764	9	773	807	9	816
June, . . . . .	727	9	736	621	8	629
July, . . . . .	708	9	717	593	6	599
August, . . . . .	721	9	730	618	7	625
September, . . . . .	750	9	759	650	7	657
October, . . . . .	755	9	764	631	6	637
November, . . . . .	773	9	782	637	6	643
December, . . . . .	811	9	820	653	6	659



PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.  
 MACHINES AND MACHINERY. [359 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	18,070	298	18,368	17,748	298	18,041
February, . . . . .	17,619	316	17,935	17,838	303	18,146
March, . . . . .	17,983	326	18,009	18,142	309	18,451
April, . . . . .	18,949	326	19,275	18,292	314	18,576
May, . . . . .	18,920	316	18,936	18,065	289	18,344
June, . . . . .	17,968	294	18,257	18,205	289	18,494
July, . . . . .	17,182	279	17,461	18,012	275	18,287
August, . . . . .	17,286	284	17,570	18,180	229	18,409
September, . . . . .	17,521	304	17,825	18,604	265	18,869
October, . . . . .	17,889	306	18,197	18,988	283	19,221
November, . . . . .	18,216	324	18,540	19,014	281	19,295
December, . . . . .	18,150	322	18,472	19,118	297	19,410

METALS AND METALLIC GOODS. [380 Establishments.]

January, . . . . .	11,771	1,250	13,021	12,184	1,361	13,545
February, . . . . .	12,076	1,296	13,372	12,048	1,374	13,422
March, . . . . .	12,109	1,337	13,446	12,307	1,430	13,737
April, . . . . .	12,348	1,377	13,725	12,175	1,398	13,568
May, . . . . .	12,223	1,359	13,582	11,944	1,364	13,308
June, . . . . .	12,015	1,271	13,286	11,651	1,312	12,963
July, . . . . .	11,432	1,233	12,665	11,391	1,212	12,603
August, . . . . .	11,639	1,180	12,819	11,623	1,239	12,867
September, . . . . .	11,990	1,320	13,310	11,971	1,327	13,298
October, . . . . .	12,305	1,439	13,744	12,435	1,404	13,839
November, . . . . .	12,570	1,444	14,014	12,602	1,422	14,024
December, . . . . .	12,643	1,401	14,044	12,552	1,389	13,941

MODELS, LASTS, AND PATTERNS. [42 Establishments.]

January, . . . . .	505	1	506	530	1	531
February, . . . . .	516	1	517	531	1	532
March, . . . . .	511	1	512	530	1	531
April, . . . . .	498	1	499	507	1	508
May, . . . . .	479	1	480	498	1	499
June, . . . . .	457	1	458	485	1	486
July, . . . . .	455	1	456	478	1	479
August, . . . . .	454	1	455	486	1	487
September, . . . . .	466	1	467	489	1	490
October, . . . . .	466	—	466	482	1	483
November, . . . . .	487	—	487	479	1	480
December, . . . . .	492	2	494	495	1	496

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## MUSICAL INSTRUMENTS AND MATERIALS. [64 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	2,476	187	2,613	2,610	163	2,773
February, . . . . .	2,441	141	2,582	2,567	168	2,735
March, . . . . .	2,517	144	2,661	2,629	166	2,795
April, . . . . .	2,421	142	2,563	2,498	168	2,661
May, . . . . .	2,386	145	2,531	2,530	157	2,487
June, . . . . .	2,356	147	2,503	2,287	149	2,386
July, . . . . .	2,286	144	2,430	2,257	136	2,393
August, . . . . .	2,008	137	2,140	2,366	146	2,512
September, . . . . .	2,312	150	2,462	2,533	151	2,684
October, . . . . .	2,458	161	2,619	2,686	161	2,797
November, . . . . .	2,554	165	2,719	2,677	162	2,839
December, . . . . .	2,601	166	2,767	2,690	173	2,863

## OILS AND ILLUMINATING FLUIDS. [8 Establishments.]

January, . . . . .	103	10	113	98	9	107
February, . . . . .	102	12	114	95	11	106
March, . . . . .	100	14	114	94	13	107
April, . . . . .	87	13	100	92	13	105
May, . . . . .	80	16	96	90	16	106
June, . . . . .	78	12	90	86	11	97
July, . . . . .	78	9	87	85	9	94
August, . . . . .	88	11	99	82	11	93
September, . . . . .	94	9	103	85	8	93
October, . . . . .	98	9	107	92	8	100
November, . . . . .	98	10	108	93	9	102
December, . . . . .	96	10	106	94	9	103

## PAINTS, COLORS, AND CRUDE CHEMICALS. [29 Establishments.]

January, . . . . .	236	11	247	261	20	281
February, . . . . .	238	12	250	266	20	286
March, . . . . .	237	12	249	274	21	295
April, . . . . .	241	13	254	281	22	303
May, . . . . .	243	13	256	281	23	304
June, . . . . .	281	18	299	268	23	291
July, . . . . .	264	16	280	262	21	283
August, . . . . .	246	12	258	263	21	284
September, . . . . .	260	16	276	269	24	293
October, . . . . .	274	17	291	270	25	295
November, . . . . .	278	19	297	279	24	303
December, . . . . .	236	15	251	272	22	294

PERSONS EMPLOYED: BY INDUSTRIES—Continued.  
 AGGREGATES, BY MONTHS—1897, 1898—Continued.

PAPER. [80 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	5,098	3,465	8,558	5,253	3,486	8,739
February, . . . . .	5,109	3,518	8,627	5,297	3,516	8,813
March, . . . . .	5,102	3,536	8,638	5,333	3,535	8,868
April, . . . . .	5,044	3,555	8,599	5,310	3,588	8,898
May, . . . . .	5,020	3,466	8,486	5,410	3,583	8,993
June, . . . . .	4,989	3,453	8,442	5,331	3,519	8,900
July, . . . . .	4,897	3,192	8,089	5,224	3,259	8,483
August, . . . . .	4,950	3,312	8,262	5,226	3,250	8,476
September, . . . . .	5,031	3,445	8,476	5,292	3,442	8,734
October, . . . . .	5,124	3,496	8,620	5,363	3,482	8,845
November, . . . . .	5,147	3,465	8,612	5,332	3,573	8,905
December, . . . . .	5,155	3,517	8,672	5,352	3,519	8,871

PAPER GOODS. [34 Establishments.]

January, . . . . .	1,079	1,341	2,420	1,242	1,480	2,722
February, . . . . .	1,086	1,377	2,463	1,197	1,480	2,677
March, . . . . .	1,107	1,429	2,536	1,230	1,474	2,704
April, . . . . .	1,083	1,409	2,492	1,245	1,583	2,828
May, . . . . .	1,098	1,396	2,499	1,243	1,579	2,822
June, . . . . .	1,067	1,330	2,397	1,266	1,682	2,948
July, . . . . .	1,087	1,312	2,399	1,265	1,690	2,955
August, . . . . .	1,072	1,329	2,401	1,264	1,694	2,958
September, . . . . .	1,171	1,406	2,577	1,300	1,734	3,034
October, . . . . .	1,197	1,475	2,672	1,292	1,742	3,034
November, . . . . .	1,203	1,474	2,677	1,324	1,727	3,051
December, . . . . .	1,234	1,503	2,737	1,240	1,545	2,785

PERFUMES, TOILET ARTICLES, ETC. [5 Establishments.]

January, . . . . .	13	15	28	11	14	25
February, . . . . .	13	17	30	11	13	24
March, . . . . .	13	17	30	11	12	23
April, . . . . .	13	17	30	11	12	23
May, . . . . .	13	15	28	8	7	15
June, . . . . .	11	14	25	7	8	15
July, . . . . .	10	13	23	10	14	24
August, . . . . .	11	13	24	10	13	23
September, . . . . .	11	13	24	10	13	23
October, . . . . .	10	15	25	10	15	25
November, . . . . .	11	16	27	11	15	26
December, . . . . .	11	13	24	10	14	24

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## PHOTOGRAPHS AND PHOTOGRAPHIC MATERIALS. [24 Establishments.]

Months.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	139	95	234	137	89	226
February, . . . . .	143	89	232	136	93	229
March, . . . . .	145	92	237	143	104	247
April, . . . . .	143	95	238	146	108	254
May, . . . . .	147	101	248	147	102	249
June, . . . . .	144	100	244	144	103	247
July, . . . . .	131	97	228	128	95	223
August, . . . . .	121	87	208	119	89	208
September, . . . . .	125	98	213	131	99	230
October, . . . . .	127	93	220	133	104	242
November, . . . . .	131	98	224	146	109	255
December, . . . . .	141	99	240	146	109	255

## POLISHES AND DRESSING. [26 Establishments.]

January, . . . . .	100	77	177	104	91	195
February, . . . . .	100	86	186	106	87	193
March, . . . . .	100	142	242	109	155	264
April, . . . . .	102	145	247	115	170	285
May, . . . . .	106	162	268	117	166	283
June, . . . . .	104	136	240	109	132	241
July, . . . . .	98	108	206	110	136	246
August, . . . . .	100	109	209	111	141	252
September, . . . . .	98	119	217	112	160	272
October, . . . . .	101	119	220	111	161	272
November, . . . . .	106	102	208	108	95	203
December, . . . . .	104	92	196	106	91	197

## PRINTING, PUBLISHING, AND BOOKBINDING. [62 Establishments.]

January, . . . . .	2,426	1,458	3,884	2,528	1,554	4,082
February, . . . . .	2,357	1,409	3,766	2,535	1,586	4,071
March, . . . . .	2,396	1,426	3,822	2,587	1,573	4,160
April, . . . . .	2,427	1,409	3,836	2,580	1,589	4,119
May, . . . . .	2,405	1,388	3,793	2,575	1,481	4,056
June, . . . . .	2,408	1,435	3,843	2,540	1,539	4,079
July, . . . . .	2,357	1,425	3,782	2,503	1,456	3,959
August, . . . . .	2,408	1,419	3,827	2,593	1,517	4,110
September, . . . . .	2,426	1,404	3,830	2,572	1,602	4,274
October, . . . . .	2,592	1,494	4,086	2,784	1,699	4,483
November, . . . . .	2,599	1,527	4,126	2,821	1,678	4,499
December, . . . . .	2,584	1,523	4,112	2,798	1,756	4,554

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## PRINT WORKS, DYE WORKS, AND BLEACHERIES. [49 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	4,898	1,041	5,939	4,902	1,089	5,991
February, . . . . .	4,877	1,057	5,934	5,045	1,130	6,175
March, . . . . .	4,952	1,075	6,027	5,078	1,158	6,236
April, . . . . .	5,008	1,092	6,095	4,988	1,187	6,175
May, . . . . .	5,078	1,062	6,140	4,717	1,097	5,814
June, . . . . .	5,019	1,080	6,099	4,816	1,100	5,916
July, . . . . .	4,791	947	5,738	4,561	1,024	5,585
August, . . . . .	4,970	916	5,886	4,886	1,055	5,941
September, . . . . .	5,031	919	5,950	4,923	1,087	6,010
October, . . . . .	5,105	1,105	6,210	5,089	1,134	6,173
November, . . . . .	5,075	1,145	6,220	4,944	1,136	6,080
December, . . . . .	5,082	1,124	6,186	4,981	1,119	6,060

## RAILROAD CONSTRUCTION AND EQUIPMENT. [16 Establishments.]

January, . . . . .	2,684	—	2,684	2,599	—	2,599
February, . . . . .	2,625	—	2,625	2,602	—	2,602
March, . . . . .	2,667	—	2,667	2,654	—	2,654
April, . . . . .	2,719	—	2,719	2,627	—	2,627
May, . . . . .	2,764	—	2,764	2,408	—	2,408
June, . . . . .	2,773	—	2,773	2,489	—	2,489
July, . . . . .	2,693	—	2,693	2,449	—	2,449
August, . . . . .	2,670	—	2,670	2,322	—	2,322
September, . . . . .	2,578	—	2,578	2,346	—	2,346
October, . . . . .	2,593	—	2,593	2,513	—	2,513
November, . . . . .	2,710	—	2,710	2,491	—	2,491
December, . . . . .	2,779	—	2,779	2,476	—	2,476

## RUBBER AND ELASTIC GOODS. [47 Establishments.]

January, . . . . .	5,025	4,193	9,218	5,333	4,372	9,705
February, . . . . .	4,967	4,118	9,085	5,323	4,287	9,620
March, . . . . .	4,477	3,848	8,325	5,243	4,059	9,302
April, . . . . .	4,629	3,962	8,591	5,123	4,101	9,224
May, . . . . .	5,105	4,160	9,265	5,109	4,101	9,210
June, . . . . .	5,063	4,232	9,295	5,075	4,329	9,304
July, . . . . .	4,996	4,119	9,115	4,989	4,381	9,220
August, . . . . .	4,583	4,060	8,643	5,007	4,311	9,218
September, . . . . .	5,105	4,330	9,435	5,133	4,409	9,592
October, . . . . .	5,200	4,451	9,651	5,238	4,657	9,950
November, . . . . .	5,180	4,401	9,581	5,316	4,747	10,063
December, . . . . .	5,214	4,358	9,572	5,413	4,753	10,166

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.  
 SADDLERY AND HARNESS. [35 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	357	23	380	352	22	374
February, . . . . .	358	28	381	350	23	373
March, . . . . .	356	21	377	342	22	364
April, . . . . .	360	21	381	346	22	368
May, . . . . .	364	21	385	341	21	362
June, . . . . .	358	21	379	277	15	292
July, . . . . .	333	18	351	314	19	333
August, . . . . .	336	19	355	319	19	338
September, . . . . .	334	19	353	327	20	347
October, . . . . .	335	21	356	327	20	347
November, . . . . .	332	20	352	323	20	343
December, . . . . .	311	17	328	326	20	346

SCIENTIFIC INSTRUMENTS AND APPLIANCES. [20 Establishments.]

January, . . . . .	963	197	1,160	1,040	205	1,245
February, . . . . .	1,085	189	1,274	1,171	232	1,403
March, . . . . .	1,062	196	1,260	1,192	240	1,432
April, . . . . .	1,105	196	1,301	1,200	214	1,414
May, . . . . .	1,101	206	1,307	1,153	249	1,402
June, . . . . .	1,091	198	1,289	1,143	222	1,365
July, . . . . .	1,068	195	1,263	1,109	259	1,368
August, . . . . .	1,052	185	1,237	1,107	268	1,375
September, . . . . .	1,068	187	1,255	1,140	281	1,421
October, . . . . .	1,131	206	1,337	1,185	293	1,478
November, . . . . .	1,169	216	1,385	1,216	295	1,511
December, . . . . .	1,147	218	1,365	1,215	288	1,503

SHIPBUILDING. [46 Establishments.]

January, . . . . .	819	-	819	644	-	644
February, . . . . .	764	-	764	678	-	678
March, . . . . .	782	-	782	722	-	722
April, . . . . .	897	-	897	766	-	766
May, . . . . .	870	-	870	783	-	783
June, . . . . .	767	-	767	898	-	898
July, . . . . .	745	-	745	768	-	768
August, . . . . .	741	-	741	664	-	664
September, . . . . .	713	-	713	599	-	599
October, . . . . .	706	-	706	731	-	731
November, . . . . .	759	-	759	769	-	769
December, . . . . .	701	-	701	754	-	754

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

SILK AND SILK GOODS. [11 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	747	1,492	2,239	806	1,745	2,551
February, . . . . .	756	1,440	2,196	830	1,738	2,568
March, . . . . .	774	1,492	2,266	865	1,770	2,635
April, . . . . .	771	1,506	2,277	862	1,742	2,604
May, . . . . .	770	1,555	2,325	843	1,701	2,544
June, . . . . .	770	1,539	2,309	844	1,623	2,467
July, . . . . .	770	1,483	2,253	825	1,594	2,419
August, . . . . .	781	1,499	2,280	822	1,519	2,341
September, . . . . .	796	1,571	2,367	835	1,588	2,423
October, . . . . .	805	1,645	2,450	861	1,666	2,527
November, . . . . .	812	1,690	2,502	876	1,702	2,578
December, . . . . .	818	1,697	2,515	891	1,781	2,672

SPORTING AND ATHLETIC GOODS. [5 Establishments.]

January, . . . . .	220	41	261	164	41	205
February, . . . . .	208	44	252	160	42	202
March, . . . . .	206	40	246	155	40	195
April, . . . . .	204	39	243	146	30	176
May, . . . . .	197	30	227	124	26	150
June, . . . . .	179	22	201	105	10	115
July, . . . . .	148	8	156	91	8	99
August, . . . . .	147	6	153	91	6	97
September, . . . . .	177	7	184	113	21	134
October, . . . . .	190	22	212	144	29	173
November, . . . . .	197	25	222	167	37	204
December, . . . . .	192	28	220	189	43	232

STONE. AGGREGATES.\* [196 Establishments.]

January, . . . . .	3,267	-	3,267	3,321	-	3,321
February, . . . . .	3,346	-	3,346	3,262	-	3,262
March, . . . . .	3,763	-	3,763	3,946	-	3,946
April, . . . . .	4,608	-	4,608	4,605	-	4,605
May, . . . . .	5,080	-	5,080	4,875	-	4,875
June, . . . . .	5,211	-	5,211	4,769	-	4,769
July, . . . . .	5,109	-	5,109	4,896	-	4,896
August, . . . . .	4,983	-	4,983	4,883	-	4,883
September, . . . . .	4,869	-	4,869	4,709	-	4,709
October, . . . . .	4,840	-	4,840	4,630	-	4,630
November, . . . . .	4,499	-	4,499	4,346	-	4,346
December, . . . . .	4,001	-	4,001	3,785	-	3,785

\* These figures include the persons employed in Stone (Quarried) and Stone (Cut and Monumental).

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.  
 STONE (QUARRIED). [51 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	1,548	-	1,548	1,823	-	1,823
February, . . . . .	1,517	-	1,517	1,714	-	1,714
March, . . . . .	1,908	-	1,908	2,134	-	2,134
April, . . . . .	2,394	-	2,394	2,635	-	2,635
May, . . . . .	2,626	-	2,626	2,754	-	2,754
June, . . . . .	2,791	-	2,791	2,664	-	2,664
July, . . . . .	2,810	-	2,810	2,785	-	2,785
August, . . . . .	2,749	-	2,749	2,816	-	2,816
September, . . . . .	2,667	-	2,667	2,669	-	2,669
October, . . . . .	2,717	-	2,717	2,608	-	2,608
November, . . . . .	2,554	-	2,554	2,479	-	2,479
December, . . . . .	2,299	-	2,299	2,164	-	2,164

STONE (CUT AND MONUMENTAL). [145 Establishments.]

January, . . . . .	1,719	-	1,719	1,498	-	1,498
February, . . . . .	1,829	-	1,829	1,548	-	1,548
March, . . . . .	1,855	-	1,855	1,812	-	1,812
April, . . . . .	2,214	-	2,214	1,970	-	1,970
May, . . . . .	2,454	-	2,454	2,121	-	2,121
June, . . . . .	2,420	-	2,420	2,105	-	2,105
July, . . . . .	2,299	-	2,299	2,111	-	2,111
August, . . . . .	2,184	-	2,184	2,067	-	2,067
September, . . . . .	2,202	-	2,202	2,040	-	2,040
October, . . . . .	2,123	-	2,123	2,027	-	2,027
November, . . . . .	1,945	-	1,945	1,867	-	1,867
December, . . . . .	1,702	-	1,702	1,621	-	1,621

STRAW AND PALM LEAF GOODS. [17 Establishments.]

January, . . . . .	1,282	2,505	3,787	1,335	2,567	3,902
February, . . . . .	1,421	2,785	4,156	1,408	2,818	4,216
March, . . . . .	1,409	2,818	4,227	1,409	2,855	4,264
April, . . . . .	1,422	2,787	4,159	1,345	2,745	4,090
May, . . . . .	1,091	2,086	3,177	1,018	1,916	2,934
June, . . . . .	525	782	1,257	596	912	1,508
July, . . . . .	417	401	818	421	368	789
August, . . . . .	509	482	941	542	376	918
September, . . . . .	648	553	1,201	685	561	1,246
October, . . . . .	787	844	1,581	770	890	1,669
November, . . . . .	804	1,235	2,039	762	1,009	1,771
December, . . . . .	1,084	1,865	2,899	1,084	1,889	2,923



## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## TALLOW, CANDLES, SOAP, AND GREASE. [66 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	772	79	851	673	74	747
February, . . . . .	776	80	856	675	74	749
March, . . . . .	768	78	841	697	77	774
April, . . . . .	792	78	870	687	79	766
May, . . . . .	788	71	854	682	79	761
June, . . . . .	781	75	856	677	66	743
July, . . . . .	758	79	837	777	78	855
August, . . . . .	755	78	833	768	85	843
September, . . . . .	751	75	826	776	88	864
October, . . . . .	752	79	831	776	98	869
November, . . . . .	737	71	808	770	98	868
December, . . . . .	732	67	799	752	86	838

## TOBACCO, SNUFF, AND CIGARS. [63 Establishments.]

January, . . . . .	1,247	510	1,757	1,288	521	1,809
February, . . . . .	1,307	502	1,809	1,342	535	1,877
March, . . . . .	1,306	504	1,810	1,344	517	1,861
April, . . . . .	1,336	526	1,862	1,397	541	1,938
May, . . . . .	1,357	537	1,894	1,431	562	2,043
June, . . . . .	1,419	541	1,960	1,527	574	2,101
July, . . . . .	1,455	542	1,997	1,613	590	2,208
August, . . . . .	1,431	523	1,954	1,608	606	2,211
September, . . . . .	1,419	549	1,968	1,561	613	2,174
October, . . . . .	1,428	557	1,985	1,532	625	2,157
November, . . . . .	1,408	516	1,924	1,446	584	2,030
December, . . . . .	1,357	520	1,877	1,386	576	1,962

## TOYS AND GAMES (CHILDREN'S). [10 Establishments.]

January, . . . . .	309	36	345	280	48	328
February, . . . . .	343	42	385	301	57	358
March, . . . . .	355	54	409	330	63	393
April, . . . . .	338	70	408	362	74	436
May, . . . . .	399	75	474	374	82	456
June, . . . . .	423	91	514	391	90	481
July, . . . . .	398	81	474	391	90	481
August, . . . . .	436	86	522	426	98	519
September, . . . . .	450	96	546	464	102	566
October, . . . . .	468	112	580	496	104	600
November, . . . . .	461	110	571	496	109	604
December, . . . . .	400	94	494	432	92	524

PERSONS EMPLOYED: BY INDUSTRIES — Continued.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

TRUNKS AND VALISES. [7 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	60	1	61	62	5	67
February, . . . . .	58	7	65	67	6	73
March, . . . . .	59	6	65	67	7	74
April, . . . . .	64	7	71	68	6	74
May, . . . . .	64	7	71	69	7	76
June, . . . . .	59	7	66	68	6	74
July, . . . . .	64	7	71	69	7	76
August, . . . . .	68	8	71	69	6	75
September, . . . . .	65	8	73	70	7	77
October, . . . . .	64	8	72	68	9	77
November, . . . . .	63	7	70	66	6	72
December, . . . . .	60	7	67	60	4	64

WHIPS, LASHES, AND STOCKS. [14 Establishments.]

January, . . . . .	276	106	382	307	131	438
February, . . . . .	276	109	385	308	131	439
March, . . . . .	283	111	394	312	135	447
April, . . . . .	298	116	409	321	133	454
May, . . . . .	299	122	421	321	133	454
June, . . . . .	298	122	420	313	125	438
July, . . . . .	301	122	423	330	130	460
August, . . . . .	304	123	427	332	130	462
September, . . . . .	304	126	430	350	136	486
October, . . . . .	312	132	444	371	149	520
November, . . . . .	302	121	423	390	154	544
December, . . . . .	287	118	405	329	144	473

WOODEN GOODS. [73 Establishments.]

January, . . . . .	1,322	58	1,380	1,330	59	1,389
February, . . . . .	1,361	61	1,422	1,387	64	1,451
March, . . . . .	1,371	64	1,435	1,428	70	1,498
April, . . . . .	1,398	71	1,469	1,424	64	1,488
May, . . . . .	1,387	69	1,456	1,387	64	1,451
June, . . . . .	1,382	71	1,453	1,382	68	1,450
July, . . . . .	1,339	72	1,411	1,299	68	1,367
August, . . . . .	1,290	67	1,357	1,374	58	1,432
September, . . . . .	1,370	68	1,438	1,366	63	1,429
October, . . . . .	1,374	69	1,443	1,397	71	1,468
November, . . . . .	1,386	77	1,463	1,395	69	1,464
December, . . . . .	1,406	80	1,485	1,380	72	1,452

## PERSONS EMPLOYED: BY INDUSTRIES — Continued.

## AGGREGATES, BY MONTHS — 1897, 1898 — Continued.

## WOOLLEN GOODS. AGGREGATES.\* [142 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	11,528	6,396	17,921	13,404	7,396	20,800
February, . . . . .	11,485	6,435	17,970	13,346	7,457	20,803
March, . . . . .	11,841	6,724	18,565	13,390	7,471	20,861
April, . . . . .	12,162	6,920	19,082	13,224	7,438	20,662
May, . . . . .	12,400	6,950	19,350	13,126	6,917	19,043
June, . . . . .	12,090	6,892	18,982	11,916	6,960	18,876
July, . . . . .	12,111	6,969	19,080	11,698	6,548	18,246
August, . . . . .	12,896	7,015	19,411	11,962	6,766	18,728
September, . . . . .	12,829	7,196	20,025	12,018	6,884	18,902
October, . . . . .	13,091	7,348	20,439	12,064	6,841	18,925
November, . . . . .	13,040	7,258	20,298	11,799	6,730	18,529
December, . . . . .	13,011	7,135	20,146	11,891	6,816	18,707

## WOOLLEN GOODS (WOVEN GOODS AND YARN). [126 Establishments.]

January, . . . . .	11,340	6,344	17,684	13,174	7,321	20,495
February, . . . . .	11,271	6,432	17,703	13,074	7,373	20,452
March, . . . . .	11,598	6,655	18,253	13,106	7,381	20,487
April, . . . . .	11,915	6,853	18,768	13,970	7,357	20,327
May, . . . . .	12,154	6,887	19,041	11,896	6,843	18,739
June, . . . . .	11,849	6,829	18,678	11,685	6,861	18,546
July, . . . . .	11,871	6,906	18,777	11,477	6,438	17,965
August, . . . . .	12,152	6,943	19,100	11,735	6,699	18,434
September, . . . . .	12,585	7,118	19,708	11,797	6,816	18,613
October, . . . . .	12,336	7,267	20,103	11,891	6,797	18,688
November, . . . . .	12,801	7,183	19,984	11,602	6,683	18,285
December, . . . . .	12,773	7,068	19,835	11,713	6,776	18,489

## WOOLLEN GOODS (SHODDY, WASTE, ETC.). [16 Establishments.]

January, . . . . .	188	49	237	230	75	305
February, . . . . .	214	53	267	272	79	351
March, . . . . .	243	69	312	284	90	374
April, . . . . .	247	67	314	254	81	335
May, . . . . .	246	63	309	230	74	304
June, . . . . .	241	63	304	231	79	310
July, . . . . .	240	63	303	221	60	281
August, . . . . .	244	67	311	227	67	294
September, . . . . .	244	78	322	221	68	289
October, . . . . .	255	81	336	198	44	237
November, . . . . .	239	75	314	197	47	244
December, . . . . .	239	72	311	178	40	218

\* These figures include the persons employed in Woollen Goods (Woven Goods and Yarn), and Woollen Goods (Shoddy, Waste, etc.).

PERSONS EMPLOYED: BY INDUSTRIES — Concluded.  
 AGGREGATES, BY MONTHS — 1897, 1898 — Concluded.  
 WORSTED GOODS. [35 Establishments.]

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	6,503	5,517	12,020	7,371	6,250	13,621
February, . . . . .	6,840	5,675	12,515	7,542	6,395	13,937
March, . . . . .	6,981	5,755	12,698	7,708	6,576	14,279
April, . . . . .	7,211	5,941	13,152	8,510	5,625	12,135
May, . . . . .	7,117	5,968	13,110	5,658	5,181	10,789
June, . . . . .	6,990	5,878	12,868	7,350	6,270	13,620
July, . . . . .	6,987	5,917	12,904	7,388	6,811	13,649
August, . . . . .	7,181	5,942	13,073	7,166	6,118	13,284
September, . . . . .	7,118	5,906	13,024	6,044	5,295	11,339
October, . . . . .	7,414	6,149	13,563	7,150	6,149	13,299
November, . . . . .	7,423	6,267	13,690	7,378	6,452	13,830
December, . . . . .	7,081	6,042	13,073	7,298	6,170	13,463

ALL INDUSTRIES. [4,701 Establishments.]

January, . . . . .	212,982	109,855	322,787	217,340	113,886	331,176
February, . . . . .	214,190	110,015	324,205	217,758	112,990	330,743
March, . . . . .	216,777	111,835	328,162	222,104	114,919	337,023
April, . . . . .	220,838	112,119	333,002	222,112	114,590	336,672
May, . . . . .	221,190	111,989	333,179	218,049	110,970	329,019
June, . . . . .	216,312	108,384	324,696	217,707	111,156	328,863
July, . . . . .	209,361	102,728	312,089	215,587	108,781	324,318
August, . . . . .	209,327	100,691	310,018	217,176	108,978	326,154
September, . . . . .	217,094	110,906	327,900	218,238	111,074	329,357
October, . . . . .	220,997	113,687	334,684	222,740	115,461	338,201
November, . . . . .	220,809	113,638	334,447	221,496	116,081	337,527
December, . . . . .	219,385	113,209	332,594	221,711	117,023	338,734



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# WAGES PAID: BY INDUSTRIES.

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[ 69 ]

## WAGES PAID: BY INDUSTRIES.

1897, 1898.

[In this presentation, the figures given under "Total Amount Paid in Wages During the Year" represent the returns made by the same establishments, in each industry, for the years 1897 and 1898, the whole number of establishments considered in "All Industries" being 4,701. Comparison is made, as regards the total amount paid in wages, between these two years. The relative increase or decrease in 1898 as compared with 1897 is given with its equivalent percentage. It should be borne in mind that these figures represent the sums paid to wage earners only and do not include amounts paid to officers, clerks, or other salaried persons.]

INDUSTRIES.	Number of Establishments Considered	TOTAL AMOUNT PAID IN WAGES DURING THE YEAR		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Amounts	Percentages
Agricultural implements, . . . . .	9	\$276,283	\$206,810	-\$20,527	+7.43
Arms and ammunition, . . . . .	14	763,096	778,466	+14,771	+1.93
Artisans' tools, . . . . .	73	987,884	1,110,266	+122,372	+12.39
Awnings, sails, tents, etc., . . . . .	42	109,033	122,186	+13,152	+12.06
Bicycles, tricycles, etc., . . . . .	18	1,374,424	981,028	-392,796	-28.58
Boots and shoes, . . . . .	644	23,560,417	23,904,714	+344,297	+1.46
Boots and shoes (factory product), . . . . .	430	21,998,711	22,398,662	+399,951	+1.83
Soles, heels, and cut stock, . . . . .	183	1,400,969	1,347,444	-53,515	-3.82
Boot and shoe findings, . . . . .	18	133,662	144,506	+10,858	+8.12
Stitching, heeling, etc., . . . . .	13	127,096	114,103	-12,992	-10.22
Boxes, barrels, kegs, etc., . . . . .	122	1,104,116	1,138,985	+34,869	+3.16
Boxes (paper), . . . . .	62	606,026	614,280	+8,254	+1.33
Brick, tiles, and sewer pipe, . . . . .	56	616,922	509,673	-107,249	-17.38
Brooms, brushes, and mops, . . . . .	23	254,087	278,760	+24,723	+9.73
Building materials, . . . . .	67	756,432	747,635	-8,797	-1.18
Burial cases, caskets, coffins, etc., . . . . .	6	109,001	107,860	-1,141	-1.06
Buttons and dress trimmings, . . . . .	13	276,479	265,922	-10,557	-3.82
Carpetings, . . . . .	12	1,606,379	1,431,921	-173,458	-10.80
Textile, . . . . .	8	1,647,427	1,553,398	-94,029	-12.54
Other, . . . . .	4	57,952	78,623	+20,671	+36.50
Carriages and wagons, . . . . .	136	1,117,334	1,135,202	+17,868	+1.60
Cement, kaolin, lime, and plaster, . . . . .	9	57,309	56,508	-801	-1.40
Chemical preparations (compound- ed), . . . . .	15	259,657	256,329	-3,328	-1.28
Clocks and watches, . . . . .	12	1,101,218	1,190,544	+89,326	+8.11
Clothing, . . . . .	152	3,412,648	3,521,082	+108,434	+3.18
Cooking, lighting, and heating ap- paratus, . . . . .	43	1,022,732	956,747	-65,985	-6.45
Cordage and twine, . . . . .	23	302,392	346,628	+44,236	+7.24
Cotton goods, . . . . .	169	27,193,335	26,394,240	-799,095	-3.31
Cotton goods (woven), . . . . .	120	24,186,809	22,922,197	-1,264,612	-5.23
Cotton yarn and thread, . . . . .	41	2,874,015	3,225,634	+351,619	+12.23
Cotton waste, . . . . .	8	132,511	146,409	+13,898	+10.49
Crayons, pencils, crucibles, etc., . . . . .	3	15,075	21,406	+6,330	+41.99
Drugs and medicines, . . . . .	25	239,107	246,420	+7,313	+3.06
Dyestuffs, . . . . .	6	60,746	59,862	-884	-1.46
Earthen, plaster, and stone ware, . . . . .	6	89,684	90,691	+1,007	+1.12
Electrical apparatus and appliances, . . . . .	21	1,383,129	1,383,985	+856	+0.06
Electroplating, . . . . .	11	59,954	52,154	-7,800	-13.01
Emery and sand paper and cloth, etc., . . . . .	10	186,756	235,266	+48,510	+25.98
Fancy articles, etc., . . . . .	19	120,467	127,043	+6,576	+5.46
Fertilizers, . . . . .	6	104,791	114,512	+9,721	+9.28
Fine arts and taxidermy, . . . . .	3	7,950	10,325	+2,375	+29.87
Fireworks and matches, . . . . .	4	37,226	36,087	-1,139	-3.07
Flax, hemp, and jute goods, . . . . .	8	384,444	378,527	-5,917	-1.54
Food preparations, . . . . .	347	4,081,021	4,073,683	-7,338	-0.18
Furniture, . . . . .	135	2,501,323	2,556,606	+55,283	+2.21

## WAGES PAID: BY INDUSTRIES — Continued.

## WAGES PAID: BY INDUSTRIES — 1897, 1898 — Concluded.

INDUSTRIES.	Number of Establishments Considered	TOTAL AMOUNT PAID IN WAGES DURING THE YEAR		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Amounts	Percentages
Glass, . . . . .	13	\$138,369	\$136,359	—\$2,010	—1.45
Glue, isinglass, and starch, . . . . .	22	193,007	189,247	—3,760	—1.95
Hair work (animal and human), . . . . .	4	38,536	34,863	—3,673	—9.53
Hose: rubber, linen, etc., . . . . .	6	305,427	225,773	—79,654	—26.08
Hosiery and knit goods, . . . . .	38	1,569,239	1,758,321	+199,082	+12.77
Ink, mucilage, and paste, . . . . .	7	33,633	35,896	+2,263	+6.73
Ivory, bone, shell, and horn goods, etc., . . . . .	19	325,321	365,811	+40,490	+12.45
Jewelry, . . . . .	93	1,533,455	1,824,203	+290,748	+18.96
Leather, . . . . .	95	2,679,496	2,640,868	—38,628	—1.44
Leather goods, . . . . .	30	416,479	439,131	+22,652	+5.44
Liquors (bottled) and carbonated beverages, . . . . .	29	176,258	165,164	—11,094	—6.29
Liquors (malt), . . . . .	31	1,177,084	1,213,084	+36,000	+3.06
Liquors (distilled), . . . . .	6	19,500	18,320	—1,180	—6.05
Lumber, . . . . .	29	327,407	315,127	—12,280	—3.75
Machines and machinery, . . . . .	359	9,505,410	10,068,181	+562,771	+5.92
Metals and metallic goods, . . . . .	380	6,534,101	6,842,581	+308,480	+3.14
Models, lasts, and patterns, . . . . .	42	342,606	346,059	+3,453	+1.01
Musical instruments and materials, . . . . .	64	1,421,381	1,519,780	+98,399	+6.92
Oils and illuminating fluids, . . . . .	8	53,204	55,172	+1,968	+3.70
Paints, colors, and crude chemicals, . . . . .	29	150,691	162,758	+12,067	+8.01
Paper, . . . . .	80	3,468,786	3,719,611	+250,825	+6.46
Paper goods, . . . . .	34	988,790	1,062,070	+73,280	+7.41
Perfumes, toilet articles, etc., . . . . .	5	11,070	9,534	—1,536	—13.98
Photographs and photographic materials, . . . . .	24	123,198	137,506	+14,308	+7.26
Polishes and dressing, . . . . .	26	96,242	107,797	+11,555	+12.01
Printing, publishing, and bookbinding, . . . . .	62	1,990,425	2,143,778	+153,353	+7.70
Print works, dye works, and bleacheries, . . . . .	49	2,565,630	2,654,016	+88,386	+3.45
Railroad construction and equipment, . . . . .	16	1,543,573	1,433,648	—109,925	—7.12
Rubber and elastic goods, . . . . .	47	3,748,565	4,092,744	+344,179	+9.18
Saddlery and harness, . . . . .	35	203,422	186,004	—17,418	—8.56
Scientific instruments and appliances, . . . . .	20	575,209	619,550	+44,341	+7.71
Shipbuilding, . . . . .	46	484,106	459,975	—24,131	—4.98
Silk and silk goods, . . . . .	11	795,583	891,204	+95,621	+12.02
Sporting and athletic goods, . . . . .	5	109,974	85,306	—24,668	—22.43
Stone, . . . . .	196	2,303,606	2,182,218	—121,388	—5.27
Quarried, . . . . .	51	1,071,547	1,052,568	—19,079	—1.78
Cut and monumental, . . . . .	145	1,231,959	1,129,650	—102,309	—8.30
Straw and palm leaf goods, . . . . .	17	1,174,829	1,176,467	+1,638	+0.14
Tallow, candles, soap, and grease, . . . . .	66	412,985	394,738	—18,247	—4.42
Tobacco, snuff, and cigars, . . . . .	63	1,172,618	1,224,558	+51,940	+4.43
Toys and games (children's), . . . . .	10	197,469	195,322	—2,147	—1.09
Trunks and valises, . . . . .	7	34,403	36,249	+1,846	+5.37
Whips, lashes, and stocks, . . . . .	14	171,361	195,085	+23,724	+13.84
Wooden goods, . . . . .	73	660,888	665,963	+5,080	+0.77
Woollen goods, . . . . .	142	7,052,842	7,205,613	+152,771	+2.17
Woven goods and yarn, . . . . .	126	6,933,020	7,090,388	+157,368	+2.27
Shoddy, waste, etc., . . . . .	16	119,322	115,225	—4,597	—3.84
Worsted goods, . . . . .	35	4,655,439	4,789,376	+133,437	+2.89
ALL INDUSTRIES, . . . . .	4,701	\$137,986,438	\$140,212,103	+\$2,225,665	+1.61



## AVERAGE YEARLY EARNINGS: BY INDUSTRIES.

1897, 1898.

[The average yearly earnings shown in this presentation have been obtained by dividing the total amount paid in wages during the years 1897 and 1898 (pages 70 and 71) by the number representing the average number of persons employed during the same years (pages 28 and 29). The relative increase or decrease in average yearly earnings in 1898 as compared with 1897 is given with its equivalent percentage. It should be borne in mind that these figures represent the sums paid to wage earners only and do not include amounts paid to officers, clerks, or other salaried persons.]

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE YEARLY EARNINGS		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Amounts	Percent- ages
Agricultural implements, . . . . .	9	\$466.69	\$484.19	+ \$17.50	+3.75
Arms and ammunition, . . . . .	14	511.52	492.08	-19.44	-3.80
Artisans' tools, . . . . .	73	509.74	536.61	+26.87	+5.27
Awning, sails, tents, etc., . . . . .	42	491.14	528.94	+37.80	+7.70
Bicycles, tricycles, etc., . . . . .	18	508.19	557.43	+35.76	+6.03
Boots and shoes, . . . . .	644	470.69	480.62	-10.07	-2.14
Boots and shoes (factory product), . . . . .	430	480.12	469.21	-10.91	-2.27
Soles, heels, and cut stock, . . . . .	183	368.29	361.44	-6.85	-1.86
Boot and shoe findings, . . . . .	18	384.06	385.35	+1.29	+0.34
Stitching, heelings, etc., . . . . .	18	435.26	422.60	-12.66	-2.91
Boxes, barrels, kegs, etc., . . . . .	122	418.38	428.67	+10.29	+2.46
Boxes (paper), . . . . .	62	349.12	345.87	-3.25	-0.93
Brick, tiles, and sewer pipe, . . . . .	56	427.23	408.72	-18.51	-4.33
Brooms, brushes, and mops, . . . . .	23	339.62	351.08	+11.46	+3.37
Building materials, . . . . .	57	582.32	584.01	+1.69	+0.29
Burial cases, caskets, coffins, etc., . . . . .	6	589.19	602.57	+13.38	+2.27
Buttons and dress trimmings, . . . . .	18	334.72	320.77	-13.95	-4.17
Carpentering, . . . . .	12	347.26	340.69	-6.57	-1.89
Textile, . . . . .	8	345.72	336.42	-9.30	-2.69
Other, . . . . .	4	394.23	436.24	+42.01	+10.66
Carriages and wagons, . . . . .	136	579.23	598.42	+19.19	+3.31
Cement, kaolin, lime, and plaster, . . . . .	9	444.26	438.05	-6.21	-1.40
Chemical preparations (compounded), . . . . .	15	575.74	600.30	+24.56	+4.27
Clocks and watches, . . . . .	12	504.22	499.81	-4.41	-0.87
Clothing, . . . . .	152	371.58	376.30	+4.72	+1.27
Cooking, lighting, and heating apparatus, . . . . .	43	611.68	594.99	-16.69	-2.73
Cordage and twine, . . . . .	23	321.03	329.86	+8.83	+2.75
Cotton goods, . . . . .	169	334.91	323.08	-11.83	-3.53
Cotton goods (woven), . . . . .	120	336.31	322.26	-14.05	-4.18
Cotton yarn and thread, . . . . .	41	322.60	327.14	+4.54	+1.41
Cotton waste, . . . . .	8	361.07	370.66	+9.59	+2.66
Crayons, pencils, crucibles, etc., . . . . .	3	314.06	345.24	+31.18	+9.93
Drugs and medicines, . . . . .	25	415.12	417.66	+2.54	+0.61
Dyestuffs, . . . . .	6	485.97	456.96	-29.01	-5.97
Earthen, plaster, and stone ware, . . . . .	6	459.92	442.40	-17.52	-3.81
Electrical apparatus and appliances, . . . . .	21	470.13	526.18	+56.05	+11.92
Electroplating, . . . . .	11	513.10	492.02	-21.08	-4.11
Emery and sand paper and cloth, etc., . . . . .	10	550.90	549.69	-1.21	-0.22
Fancy articles, etc., . . . . .	19	355.36	357.87	+2.51	+0.71
Fertilizers, . . . . .	6	531.93	537.62	+5.69	+1.07
Fine arts and taxidermy, . . . . .	3	611.54	607.35	-4.19	-0.69
Fireworks and matches, . . . . .	4	388.77	400.41	+11.64	+4.34

## WAGES PAID: BY INDUSTRIES — Continued.

AVERAGE YEARLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE YEARLY EARNINGS		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Amounts	Percent- ages
Flax, hemp, and jute goods, . . . .	8	\$301.52	\$295.08	-\$6.49	-2.15
Food preparations, . . . . .	347	451.00	443.95	-7.05	-1.56
Furniture, . . . . .	135	472.22	479.84	+7.62	+1.61
Glass, . . . . .	13	506.85	532.65	+25.80	+5.09
Glue, isinglass, and starch, . . . .	22	445.74	454.92	+9.18	+2.06
Hair work (animal and human), . . .	4	291.94	335.22	+43.28	+14.82
Hose: rubber, linen, etc., . . . .	6	442.65	448.85	+6.20	+1.40
Hosiery and knit goods, . . . . .	38	301.19	301.81	+0.62	+0.21
Ink, mucilage, and paste, . . . . .	7	525.52	527.88	+2.36	+0.45
Ivory, bone, shell, and horn goods, etc.,	19	413.89	397.19	-16.70	-4.03
Jewelry, . . . . .	93	487.43	479.55	-7.88	-1.62
Leather, . . . . .	95	478.74	483.23	+4.49	+0.94
Leather goods, . . . . .	30	459.89	436.51	-23.18	-5.04
Liquors (bottled) and carbonated beverages, . . . . .	29	607.79	577.50	-30.29	-4.98
Liquors (malt), . . . . .	31	782.12	801.77	+19.65	+2.51
Liquors (distilled), . . . . .	6	629.03	704.62	+75.59	+12.02
Lumber, . . . . .	29	452.85	457.37	+4.52	+1.00
Machines and machinery, . . . . .	359	520.53	539.62	+19.09	+3.67
Metals and metallic goods, . . . . .	380	493.46	508.74	+15.28	+3.10
Models, lasts, and patterns, . . . .	42	706.40	692.12	-14.28	-2.02
Musical instruments and materials, . .	64	557.19	570.49	+13.30	+2.39
Oils and illuminating fluids, . . . .	8	511.58	540.90	+29.32	+5.73
Paints, colors, and crude chemicals, .	29	558.11	557.39	-0.72	-0.13
Paper, . . . . .	80	410.55	422.83	+12.28	+2.99
Paper goods, . . . . .	34	391.60	368.77	-22.83	-5.83
Perfumes, toilet articles, etc., . . .	5	410.00	433.36	+23.36	+5.70
Photographs and photographic materials,	24	545.52	577.76	+32.24	+5.91
Polishes and dressing, . . . . .	26	439.46	459.99	+20.53	+4.67
Printing, publishing, and bookbinding, .	62	511.15	509.94	-1.21	-0.24
Print works, dye works, and bleacheries,	49	424.84	441.31	+16.47	+3.88
Railroad construction and equipment, .	16	574.03	573.92	-0.11	-0.02
Rubber and elastic goods, . . . . .	47	409.81	428.16	+18.35	+4.48
Saddlery and harness, . . . . .	35	555.80	529.93	-25.87	-4.65
Scientific instruments and appliances, .	20	446.94	459.09	+12.15	+2.72
Shipbuilding, . . . . .	46	623.85	625.82	+1.97	+0.32
Silk and silk goods, . . . . .	11	340.72	352.39	+11.67	+3.43
Sporting and athletic goods, . . . .	5	511.51	513.89	+2.38	+0.47
Stone, . . . . .	196	514.43	501.54	-12.89	-2.51
Quarried, . . . . .	51	449.52	430.85	-18.67	-4.15
Cut and monumental, . . . . .	145	588.33	592.06	+3.73	+0.63
Straw and palm leaf goods, . . . . .	17	465.28	466.11	+0.83	+0.18
Tallow, candles, soap, and grease, . .	66	491.06	487.93	-3.13	-0.64
Tobacco, snuff, and cigars, . . . .	63	614.90	601.75	-13.15	-2.14
Toys and games (children's), . . . .	10	407.99	406.92	-1.07	-0.26
Trunks and valises, . . . . .	7	505.93	496.56	-9.37	-1.85
Whips, lashes, and stocks, . . . . .	14	413.92	416.85	+2.93	+0.71
Wooden goods, . . . . .	73	458.63	460.56	+1.93	+0.42
Woollen goods, . . . . .	142	365.72	370.70	+4.98	+1.36
Woven goods and yarn, . . . . .	126	365.24	370.45	+5.21	+1.43
Shoddy, waste, etc., . . . . .	16	395.45	386.66	-8.79	-2.22
Worsted goods, . . . . .	35	358.80	365.44	+6.64	+1.85
ALL INDUSTRIES, . . . . .	4,701	\$422.26	\$421.48	-\$0.78	-0.18

## CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES.

1897, 1898.

[In this presentation is shown, for 1897 and 1898, a classification by sex of the weekly earnings, ranging from under \$5 per week to \$20 and over. The returns were made by manufacturers to cover the week during which the largest number of persons was employed. It should be borne in mind that these figures represent wage earners only; officers, clerks, or other salaried persons are not included.]

### AGRICULTURAL IMPLEMENTS. [9 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	23	-	23	41	-	41
\$5 but under \$6, . . . .	19	-	19	31	-	31
\$6 but under \$7, . . . .	47	-	47	50	-	50
\$7 but under \$8, . . . .	98	-	98	111	-	111
\$8 but under \$9, . . . .	63	-	63	79	-	79
\$9 but under \$10, . . . .	112	-	112	81	-	81
\$10 but under \$12, . . . .	118	-	118	107	-	107
\$12 but under \$15, . . . .	116	-	116	103	-	103
\$15 but under \$20, . . . .	43	-	43	42	-	42
\$20 and over, . . . . .	14	-	14	13	-	13
TOTALS, . . . . .	653	-	653	658	-	658

### ARMS AND AMMUNITION. [14 Establishments.]

Under \$5, . . . . .	200	7	207	271	17	288
\$5 but under \$6, . . . .	106	2	108	146	10	156
\$6 but under \$7, . . . .	143	10	153	161	20	181
\$7 but under \$8, . . . .	191	16	207	205	17	222
\$8 but under \$9, . . . .	136	19	155	161	43	204
\$9 but under \$10, . . . .	193	44	237	154	29	183
\$10 but under \$12, . . . .	234	44	278	260	21	281
\$12 but under \$15, . . . .	279	1	280	320	7	327
\$15 but under \$20, . . . .	233	1	234	207	-	207
\$20 and over, . . . . .	120	-	120	144	1	145
TOTALS, . . . . .	1,835	144	1,979	2,029	165	2,194

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## ARTISANS' TOOLS. [73 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	119	13	132	119	15	134
\$5 but under \$6, . . . .	86	6	92	101	13	114
\$6 but under \$7, . . . .	106	13	119	140	10	150
\$7 but under \$8, . . . .	147	7	154	175	17	192
\$8 but under \$9, . . . .	146	10	156	168	8	176
\$9 but under \$10, . . . .	210	6	216	218	5	223
\$10 but under \$12, . . . .	343	1	349	357	3	360
\$12 but under \$15, . . . .	403	1	404	413	—	413
\$15 but under \$20, . . . .	298	—	298	327	—	327
\$20 and over, . . . . .	123	—	123	132	—	132
TOTALS, . . . . .	1,991	57	2,048	2,150	71	2,221

## AWNINGS, SAILS, TENTS, ETC. [42 Establishments.]

Under \$5, . . . . .	4	29	33	7	33	40
\$5 but under \$6, . . . .	6	3	14	6	12	18
\$6 but under \$7, . . . .	4	18	22	9	24	33
\$7 but under \$8, . . . .	6	11	17	11	13	29
\$8 but under \$9, . . . .	3	11	14	10	9	19
\$9 but under \$10, . . . .	10	15	25	12	16	28
\$10 but under \$12, . . . .	19	11	30	13	15	33
\$12 but under \$15, . . . .	52	2	54	43	7	50
\$15 but under \$20, . . . .	123	—	123	115	—	115
\$20 and over, . . . . .	1	—	1	9	—	9
TOTALS, . . . . .	223	106	333	240	134	374

## BICYCLES, TRICYCLES, ETC. [18 Establishments.]

Under \$5, . . . . .	111	10	121	139	19	158
\$5 but under \$6, . . . .	55	3	63	59	11	70
\$6 but under \$7, . . . .	123	14	137	76	11	87
\$7 but under \$8, . . . .	186	16	202	124	10	134
\$8 but under \$9, . . . .	219	32	251	150	6	156
\$9 but under \$10, . . . .	460	3	463	357	4	361
\$10 but under \$12, . . . .	475	3	478	422	7	429
\$12 but under \$15, . . . .	1,343	8	1,351	770	6	776
\$15 but under \$20, . . . .	612	4	616	435	2	437
\$20 and over, . . . . .	215	—	215	131	—	131
TOTALS, . . . . .	3,799	98	3,897	2,713	76	2,789

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## BOOTS AND SHOES. AGGREGATES.\* [644 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	2,794	3,738	6,532	3,161	4,288	7,449
\$5 but under \$6, . . . . .	1,743	2,138	3,881	2,083	2,250	4,283
\$6 but under \$7, . . . . .	2,343	2,372	4,715	2,385	2,502	4,887
\$7 but under \$8, . . . . .	2,493	2,311	4,804	2,794	2,408	5,197
\$8 but under \$9, . . . . .	2,702	1,977	4,679	3,066	2,048	5,111
\$9 but under \$10, . . . . .	3,758	1,929	5,687	4,049	2,020	6,069
\$10 but under \$12, . . . . .	6,464	2,102	8,566	6,768	2,191	8,959
\$12 but under \$15, . . . . .	9,152	1,594	10,746	8,574	1,639	10,213
\$15 but under \$20, . . . . .	6,609	463	7,072	6,613	421	7,084
\$20 and over, . . . . .	2,264	45	2,309	2,289	44	2,333
TOTALS, . . . . .	40,322	18,669	58,991	41,732	19,808	61,535

## BOOTS AND SHOES (FACTORY PRODUCT). [430 Establishments.]

Under \$5, . . . . .	2,435	2,911	5,346	2,737	3,480	6,217
\$5 but under \$6, . . . . .	1,530	1,767	3,297	1,789	1,890	3,679
\$6 but under \$7, . . . . .	2,052	2,054	4,106	2,099	2,195	4,294
\$7 but under \$8, . . . . .	2,158	2,168	4,326	2,469	2,291	4,760
\$8 but under \$9, . . . . .	2,423	1,888	4,311	2,792	1,962	4,754
\$9 but under \$10, . . . . .	3,323	1,876	5,199	3,607	1,969	5,576
\$10 but under \$12, . . . . .	5,836	2,065	7,901	6,231	2,154	8,385
\$12 but under \$15, . . . . .	8,547	1,570	10,117	8,023	1,614	9,637
\$15 but under \$20, . . . . .	6,385	458	6,843	6,410	418	6,828
\$20 and over, . . . . .	2,206	45	2,251	2,245	44	2,289
TOTALS, . . . . .	36,895	16,802	53,697	38,402	18,017	56,419

## BOOTS AND SHOES (SOLES, HEELS, AND CUT STOCK). [183 Establishments.]

Under \$5, . . . . .	339	763	1,102	397	692	1,089
\$5 but under \$6, . . . . .	201	310	511	229	297	526
\$6 but under \$7, . . . . .	265	265	530	271	264	535
\$7 but under \$8, . . . . .	298	120	418	280	95	375
\$8 but under \$9, . . . . .	242	43	285	236	44	280
\$9 but under \$10, . . . . .	382	27	409	339	22	411
\$10 but under \$12, . . . . .	548	17	565	452	17	469
\$12 but under \$15, . . . . .	511	3	514	469	3	472
\$15 but under \$20, . . . . .	163	2	165	148	1	149
\$20 and over, . . . . .	35	—	35	34	—	34
TOTALS, . . . . .	2,984	1,550	4,534	2,905	1,435	4,340

\* These figures include the classified weekly earnings reported in Boots and Shoes: Factory Product; Soles, Heels, and Cut Stock; Findings; and Stitching, Heeling, etc.

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## BOOTS AND SHOES (FINDINGS). [18 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	16	44	60	18	93	111
\$5 but under \$6, . . . .	11	55	66	13	54	67
\$6 but under \$7, . . . .	19	40	59	13	37	50
\$7 but under \$8, . . . .	20	11	31	19	7	26
\$8 but under \$9, . . . .	21	13	34	13	8	21
\$9 but under \$10, . . . .	17	7	24	25	7	32
\$10 but under \$12, . . . .	37	9	46	39	9	48
\$12 but under \$15, . . . .	38	3	41	43	4	47
\$15 but under \$20, . . . .	24	1	25	23	1	24
\$20 and over, . . . . .	7	—	7	8	—	8
TOTALS, . . . . .	210	183	393	219	220	439

## BOOTS AND SHOES (STITCHING, HEELING, ETC.). [18 Establishments.]

Under \$5, . . . . .	4	20	24	9	23	32
\$5 but under \$6, . . . .	1	6	7	2	9	11
\$6 but under \$7, . . . .	7	13	20	2	6	8
\$7 but under \$8, . . . .	17	12	29	26	10	36
\$8 but under \$9, . . . .	16	33	49	25	31	56
\$9 but under \$10, . . . .	36	19	55	23	22	50
\$10 but under \$12, . . . .	43	11	54	46	11	57
\$12 but under \$15, . . . .	56	18	74	39	18	57
\$15 but under \$20, . . . .	37	2	39	27	1	28
\$20 and over, . . . . .	16	—	16	2	—	2
TOTALS, . . . . .	233	134	367	206	131	337

## BOXES, BARRELS, KEGS, ETC. [122 Establishments.]

Under \$5, . . . . .	117	128	245	107	124	231
\$5 but under \$6, . . . .	66	90	156	94	63	157
\$6 but under \$7, . . . .	175	113	288	203	113	316
\$7 but under \$8, . . . .	247	65	312	284	75	359
\$8 but under \$9, . . . .	251	46	297	238	47	285
\$9 but under \$10, . . . .	543	31	574	566	44	610
\$10 but under \$12, . . . .	504	25	529	482	21	503
\$12 but under \$15, . . . .	395	8	403	400	14	414
\$15 but under \$20, . . . .	158	2	160	147	3	150
\$20 and over, . . . . .	28	—	28	21	—	21
TOTALS, . . . . .	2,484	508	2,992	2,542	504	3,046

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## BOXES (PAPER). [62 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	47	370	417	46	427	473
\$5 but under \$6, . . . .	40	212	252	37	212	249
\$6 but under \$7, . . . .	42	244	286	35	281	316
\$7 but under \$8, . . . .	42	199	241	50	214	264
\$8 but under \$9, . . . .	32	106	138	42	106	148
\$9 but under \$10, . . . .	72	91	163	63	80	143
\$10 but under \$12, . . . .	87	93	180	89	77	166
\$12 but under \$15, . . . .	104	38	142	110	41	151
\$15 but under \$20, . . . .	93	12	105	93	6	99
\$20 and over, . . . . .	13	3	16	12	1	13
TOTALS, . . . . .	572	1,368	1,940	577	1,445	2,022

## BRICK, TILES, AND SEWER PIPE. [56 Establishments.]

Under \$5, . . . . .	151	3	154	225	—	225
\$5 but under \$6, . . . .	111	—	111	49	—	49
\$6 but under \$7, . . . .	174	2	176	126	4	130
\$7 but under \$8, . . . .	190	—	190	256	—	256
\$8 but under \$9, . . . .	404	—	404	316	—	316
\$9 but under \$10, . . . .	634	—	634	591	—	591
\$10 but under \$12, . . . .	460	—	460	439	—	439
\$12 but under \$15, . . . .	175	—	175	127	—	127
\$15 but under \$20, . . . .	80	—	80	78	—	78
\$20 and over, . . . . .	29	—	29	30	—	30
TOTALS, . . . . .	2,408	5	2,413	2,237	4	2,241

## BROOMS, BRUSHES, AND MOPS. [23 Establishments.]

Under \$5, . . . . .	90	250	340	80	245	325
\$5 but under \$6, . . . .	31	94	125	25	92	117
\$6 but under \$7, . . . .	30	38	68	41	33	74
\$7 but under \$8, . . . .	34	17	51	43	15	58
\$8 but under \$9, . . . .	17	9	26	22	10	32
\$9 but under \$10, . . . .	43	3	46	48	3	51
\$10 but under \$12, . . . .	46	2	48	46	2	48
\$12 but under \$15, . . . .	65	—	65	49	—	49
\$15 but under \$20, . . . .	66	—	66	65	—	65
\$20 and over, . . . . .	11	—	11	12	—	12
TOTALS, . . . . .	433	413	846	431	400	831

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## BUILDING MATERIALS. [57 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	36	1	37	37	1	38
\$5 but under \$6, . . . . .	40	-	40	24	-	24
\$6 but under \$7, . . . . .	43	1	44	40	1	41
\$7 but under \$8, . . . . .	80	-	80	60	-	60
\$8 but under \$9, . . . . .	91	-	91	76	-	76
\$9 but under \$10, . . . . .	181	-	181	202	-	202
\$10 but under \$12, . . . . .	229	-	229	210	-	210
\$12 but under \$15, . . . . .	403	-	403	429	-	429
\$15 but under \$20, . . . . .	417	-	417	394	-	394
\$20 and over, . . . . .	42	-	42	41	-	41
TOTALS, . . . . .	1,562	2	1,564	1,513	2	1,515

## BURIAL CASES, CASKETS, COFFINS, ETC. [6 Establishments.]

Under \$5, . . . . .	2	1	3	-	1	1
\$5 but under \$6, . . . . .	3	-	3	3	2	5
\$6 but under \$7, . . . . .	4	2	6	6	-	6
\$7 but under \$8, . . . . .	7	-	7	5	5	10
\$8 but under \$9, . . . . .	6	3	9	4	5	9
\$9 but under \$10, . . . . .	11	10	21	10	3	13
\$10 but under \$12, . . . . .	21	4	25	26	2	28
\$12 but under \$15, . . . . .	50	4	54	46	3	49
\$15 but under \$20, . . . . .	53	-	53	43	-	43
\$20 and over, . . . . .	13	-	13	16	-	16
TOTALS, . . . . .	170	24	194	164	21	185

## BUTTONS AND DRESS TRIMMINGS. [13 Establishments.]

Under \$5, . . . . .	54	245	299	60	305	365
\$5 but under \$6, . . . . .	31	243	274	35	196	231
\$6 but under \$7, . . . . .	43	80	123	32	71	103
\$7 but under \$8, . . . . .	49	39	88	42	43	90
\$8 but under \$9, . . . . .	52	22	74	42	20	62
\$9 but under \$10, . . . . .	52	3	55	50	3	53
\$10 but under \$12, . . . . .	58	1	59	60	1	61
\$12 but under \$15, . . . . .	60	1	61	64	-	64
\$15 but under \$20, . . . . .	32	-	32	37	-	37
\$20 and over, . . . . .	7	-	7	7	-	7
TOTALS, . . . . .	438	634	1,072	429	644	1,073



## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## CARPETINGS. AGGREGATES.\* [12 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	377	640	1,017	436	782	1,218
\$5 but under \$6, . . . .	152	587	739	168	450	618
\$6 but under \$7, . . . .	237	417	654	206	312	518
\$7 but under \$8, . . . .	215	337	552	236	409	645
\$8 but under \$9, . . . .	232	184	416	222	205	427
\$9 but under \$10, . . . .	262	184	446	277	126	403
\$10 but under \$12, . . . .	305	179	484	311	189	500
\$12 but under \$15, . . . .	322	25	347	271	33	304
\$15 but under \$20, . . . .	208	—	208	168	—	168
\$20 and over, . . . . .	71	—	71	74	—	74
TOTALS, . . . . .	2,381	2,553	4,934	2,369	2,506	4,875

## CARPETINGS (TEXTILE). [8 Establishments.]

Under \$5, . . . . .	376	618	994	434	755	1,189
\$5 but under \$6, . . . .	143	547	690	156	392	548
\$6 but under \$7, . . . .	231	408	639	199	307	506
\$7 but under \$8, . . . .	209	331	540	231	400	631
\$8 but under \$9, . . . .	212	180	392	201	201	402
\$9 but under \$10, . . . .	233	184	417	242	122	364
\$10 but under \$12, . . . .	290	179	469	294	180	483
\$12 but under \$15, . . . .	308	25	333	250	33	282
\$15 but under \$20, . . . .	199	—	199	162	—	162
\$20 and over, . . . . .	71	—	71	73	—	73
TOTALS, . . . . .	2,372	2,472	4,744	2,251	2,399	4,650

## CARPETINGS (OTHER). [4 Establishments.]

Under \$5, . . . . .	1	22	23	2	27	29
\$5 but under \$6, . . . .	9	40	49	12	58	70
\$6 but under \$7, . . . .	6	9	15	7	5	12
\$7 but under \$8, . . . .	6	6	12	5	9	14
\$8 but under \$9, . . . .	20	4	24	21	4	25
\$9 but under \$10, . . . .	29	—	29	35	4	39
\$10 but under \$12, . . . .	15	—	15	17	—	17
\$12 but under \$15, . . . .	14	—	14	12	—	12
\$15 but under \$20, . . . .	9	—	9	6	—	6
\$20 and over, . . . . .	—	—	—	1	—	1
TOTALS, . . . . .	109	81	190	118	107	225

\* These figures include the classified weekly earnings reported in Carpetings (Textile) and Carpetings (Other).

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## CARRIAGES AND WAGONS. [186 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	29	1	30	39	7	46
\$5 but under \$6, . . . .	25	2	27	35	3	38
\$6 but under \$7, . . . .	63	3	66	67	6	73
\$7 but under \$8, . . . .	90	6	96	60	—	60
\$8 but under \$9, . . . .	100	2	102	83	1	84
\$9 but under \$10, . . . .	239	2	241	230	2	232
\$10 but under \$12, . . . .	434	1	435	458	1	459
\$12 but under \$15, . . . .	730	—	730	732	—	732
\$15 but under \$20, . . . .	605	—	605	575	—	575
\$20 and over, . . . . .	55	—	55	69	—	69
TOTALS, . . . . .	2,370	17	2,387	2,348	20	2,368

## CEMENT, KAOLIN, LIME, AND PLASTER. [9 Establishments.]

Under \$5, . . . . .	3	—	3	3	—	3
\$5 but under \$6, . . . .	4	—	4	4	—	4
\$6 but under \$7, . . . .	—	—	—	—	—	—
\$7 but under \$8, . . . .	32	—	32	27	—	27
\$8 but under \$9, . . . .	3	—	3	8	—	8
\$9 but under \$10, . . . .	78	—	78	83	—	83
\$10 but under \$12, . . . .	3	—	3	3	—	3
\$12 but under \$15, . . . .	13	—	13	14	—	14
\$15 but under \$20, . . . .	11	—	11	10	—	10
\$20 and over, . . . . .	—	—	—	—	—	—
TOTALS, . . . . .	147	—	147	152	—	152

## CHEMICAL PREPARATIONS (COMPOUNDED). [15 Establishments.]

Under \$5, . . . . .	3	2	5	3	2	5
\$5 but under \$6, . . . .	2	1	3	2	—	2
\$6 but under \$7, . . . .	6	9	15	3	10	13
\$7 but under \$8, . . . .	13	1	14	10	1	11
\$8 but under \$9, . . . .	18	1	19	14	1	15
\$9 but under \$10, . . . .	216	—	216	173	—	173
\$10 but under \$12, . . . .	70	—	70	107	—	107
\$12 but under \$15, . . . .	113	—	113	114	—	114
\$15 but under \$20, . . . .	31	—	31	36	—	36
\$20 and over, . . . . .	1	—	1	3	—	3
TOTALS, . . . . .	473	14	487	465	14	479

## WAGES PAID: BY INDUSTRIES—Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES—1897, 1898  
—Continued.

## CLOCKS AND WATCHES. [12 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	51	173	224	45	178	223
\$5 but under \$6, . . . .	41	118	159	27	130	157
\$6 but under \$7, . . . .	24	258	282	19	253	272
\$7 but under \$8, . . . .	24	346	370	20	351	371
\$8 but under \$9, . . . .	35	316	351	29	322	351
\$9 but under \$10, . . . .	60	97	157	57	96	153
\$10 but under \$12, . . . .	106	37	143	111	40	151
\$12 but under \$15, . . . .	276	6	282	265	6	271
\$15 but under \$20, . . . .	374	3	377	362	2	364
\$20 and over, . . . . .	182	—	182	181	—	181
TOTALS, . . . . .	1,173	1,364	2,527	1,116	1,378	2,494

## CLOTHING. [152 Establishments.]

Under \$5, . . . . .	276	1,686	1,962	230	1,680	1,910
\$5 but under \$6, . . . .	162	1,182	1,344	160	1,170	1,330
\$6 but under \$7, . . . .	212	1,339	1,551	236	1,407	1,643
\$7 but under \$8, . . . .	229	1,210	1,439	256	1,150	1,406
\$8 but under \$9, . . . .	221	992	1,213	250	998	1,248
\$9 but under \$10, . . . .	277	710	987	277	662	939
\$10 but under \$12, . . . .	329	556	885	355	497	852
\$12 but under \$15, . . . .	539	153	692	532	183	715
\$15 but under \$20, . . . .	521	39	560	503	62	565
\$20 and over, . . . . .	398	14	412	342	16	358
TOTALS, . . . . .	3,164	7,881	11,045	3,141	7,825	10,966

## COOKING, LIGHTING, AND HEATING APPARATUS. [43 Establishments.]

Under \$5, . . . . .	26	1	27	43	—	43
\$5 but under \$6, . . . .	30	—	30	30	1	31
\$6 but under \$7, . . . .	56	1	57	72	2	74
\$7 but under \$8, . . . .	54	2	56	64	3	67
\$8 but under \$9, . . . .	70	—	70	49	—	49
\$9 but under \$10, . . . .	294	1	295	288	1	289
\$10 but under \$12, . . . .	253	—	253	254	—	254
\$12 but under \$15, . . . .	427	—	427	333	—	333
\$15 but under \$20, . . . .	463	—	463	496	—	496
\$20 and over, . . . . .	244	—	244	253	—	253
TOTALS, . . . . .	1,917	5	1,922	1,882	7	1,889

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## CORDAGE AND TWINE. [23 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	152	389	541	153	391	544
\$5 but under \$6, . . . .	91	226	317	112	211	323
\$6 but under \$7, . . . .	176	137	313	172	127	299
\$7 but under \$8, . . . .	86	51	137	87	48	135
\$8 but under \$9, . . . .	474	15	489	610	33	643
\$9 but under \$10, . . . .	111	9	120	126	4	130
\$10 but under \$12, . . . .	62	6	68	53	1	54
\$12 but under \$15, . . . .	79	—	79	60	—	60
\$15 but under \$20, . . . .	46	—	46	51	1	52
\$20 and over, . . . . .	7	—	7	11	—	11
TOTALS, . . . . .	1,284	833	2,117	1,435	816	2,251

## COTTON GOODS. AGGREGATES.\* [169 Establishments.]

Under \$5, . . . . .	8,099	12,455	20,554	9,256	14,193	23,449
\$5 but under \$6, . . . .	5,306	8,976	14,282	6,141	9,457	15,598
\$6 but under \$7, . . . .	7,285	8,563	15,848	7,644	8,265	15,909
\$7 but under \$8, . . . .	5,581	6,419	12,000	6,178	6,369	12,547
\$8 but under \$9, . . . .	5,246	4,618	9,864	5,084	3,463	8,497
\$9 but under \$10, . . . .	3,811	1,479	5,290	3,470	902	4,372
\$10 but under \$12, . . . .	4,329	516	4,845	3,867	367	4,224
\$12 but under \$15, . . . .	2,642	44	2,686	2,182	32	2,214
\$15 but under \$20, . . . .	1,029	3	1,032	889	4	893
\$20 and over, . . . . .	627	—	627	611	—	611
TOTALS, . . . . .	43,955	43,073	87,028	45,262	43,052	88,314

## COTTON GOODS (WOVEN). [120 Establishments.]

Under \$5, . . . . .	7,068	10,989	18,057	8,069	12,632	20,701
\$5 but under \$6, . . . .	4,720	7,763	12,483	5,507	8,187	13,694
\$6 but under \$7, . . . .	6,559	7,214	13,773	6,873	6,952	13,825
\$7 but under \$8, . . . .	5,111	5,763	10,864	5,589	5,637	11,226
\$8 but under \$9, . . . .	4,969	4,271	9,240	4,719	3,099	7,818
\$9 but under \$10, . . . .	3,411	1,375	4,786	3,036	755	3,791
\$10 but under \$12, . . . .	3,899	481	4,380	3,448	308	3,756
\$12 but under \$15, . . . .	2,171	40	2,211	1,679	27	1,706
\$15 but under \$20, . . . .	803	2	805	652	3	655
\$20 and over, . . . . .	535	—	535	491	—	491
TOTALS, . . . . .	39,246	37,888	77,134	40,063	37,600	77,663

\* These figures include the classified weekly earnings reported in Cotton Goods: Woven, Yarn and Thread, and Waste.

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## COTTON GOODS (YARN AND THREAD). [41 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	1,027	1,397	2,424	1,183	1,486	2,669
\$5 but under \$6, . . . .	586	1,170	1,756	634	1,218	1,852
\$6 but under \$7, . . . .	692	1,343	2,035	734	1,309	2,043
\$7 but under \$8, . . . .	417	660	1,077	534	724	1,258
\$8 but under \$9, . . . .	254	347	601	292	364	656
\$9 but under \$10, . . . .	309	104	413	332	147	479
\$10 but under \$12, . . . .	408	35	443	382	59	441
\$12 but under \$15, . . . .	455	4	459	488	5	493
\$15 but under \$20, . . . .	213	1	214	221	1	222
\$20 and over, . . . . .	90	—	90	118	—	118
TOTALS, . . . . .	4,450	5,061	9,511	4,918	5,313	10,231

## COTTON GOODS (WASTE). [8 Establishments.]

Under \$5, . . . . .	4	69	73	4	75	79
\$5 but under \$6, . . . .	1	43	44	—	52	52
\$6 but under \$7, . . . .	34	6	40	37	4	41
\$7 but under \$8, . . . .	53	6	59	55	8	63
\$8 but under \$9, . . . .	23	—	23	23	—	23
\$9 but under \$10, . . . .	91	—	91	102	—	102
\$10 but under \$12, . . . .	22	—	22	27	—	27
\$12 but under \$15, . . . .	16	—	16	15	—	15
\$15 but under \$20, . . . .	13	—	13	16	—	16
\$20 and over, . . . . .	2	—	2	2	—	2
TOTALS, . . . . .	259	124	383	281	139	420

## CRAYONS, PENCILS, CRUCIBLES, ETC. [3 Establishments.]

Under \$5, . . . . .	—	22	22	3	55	58
\$5 but under \$6, . . . .	—	4	4	1	8	9
\$6 but under \$7, . . . .	3	3	6	—	2	2
\$7 but under \$8, . . . .	3	1	4	1	—	1
\$8 but under \$9, . . . .	1	1	2	1	—	1
\$9 but under \$10, . . . .	11	—	11	2	—	2
\$10 but under \$12, . . . .	3	1	4	13	2	15
\$12 but under \$15, . . . .	1	—	1	6	—	6
\$15 but under \$20, . . . .	2	1	3	4	—	4
\$20 and over, . . . . .	1	1	2	2	—	2
TOTALS, . . . . .	25	34	59	33	67	100

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## DRUGS AND MEDICINES. [25 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	49	48	97	47	114	161
\$5 but under \$6, . . . .	15	140	155	16	84	100
\$6 but under \$7, . . . .	17	87	104	20	79	99
\$7 but under \$8, . . . .	19	45	64	25	50	75
\$8 but under \$9, . . . .	25	24	49	27	25	52
\$9 but under \$10, . . . .	46	9	55	46	16	62
\$10 but under \$12, . . . .	57	12	69	55	11	66
\$12 but under \$15, . . . .	58	4	62	52	9	61
\$15 but under \$20, . . . .	42	5	47	43	3	51
\$20 and over, . . . . .	16	1	17	20	1	21
TOTALS, . . . . .	344	375	719	356	392	748

## DYESTUFFS. [6 Establishments.]

Under \$5, . . . . .	1	-	1	-	1	1
\$5 but under \$6, . . . .	3	-	3	-	2	2
\$6 but under \$7, . . . .	1	21	22	1	42	43
\$7 but under \$8, . . . .	7	11	18	8	11	19
\$8 but under \$9, . . . .	18	11	29	13	1	14
\$9 but under \$10, . . . .	23	10	33	37	7	44
\$10 but under \$12, . . . .	32	-	32	28	-	28
\$12 but under \$15, . . . .	16	-	16	14	-	14
\$15 but under \$20, . . . .	3	-	3	6	-	6
\$20 and over, . . . . .	-	-	-	-	-	-
TOTALS, . . . . .	104	53	157	107	64	171

## EARTHEN, PLASTER, AND STONE WARE. [6 Establishments.]

Under \$5, . . . . .	7	23	30	13	19	32
\$5 but under \$6, . . . .	17	8	25	14	13	27
\$6 but under \$7, . . . .	11	2	13	5	6	11
\$7 but under \$8, . . . .	21	3	24	19	1	20
\$8 but under \$9, . . . .	10	2	12	9	2	11
\$9 but under \$10, . . . .	20	-	20	26	-	26
\$10 but under \$12, . . . .	47	-	47	49	-	49
\$12 but under \$15, . . . .	18	-	18	18	-	18
\$15 but under \$20, . . . .	21	-	21	26	-	26
\$20 and over, . . . . .	4	-	4	3	-	3
TOTALS, . . . . .	176	38	214	182	41	223

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## ELECTRICAL APPARATUS AND APPLIANCES. [21 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	195	206	401	193	234	427
\$5 but under \$6, . . . .	99	88	187	106	98	199
\$6 but under \$7, . . . .	124	86	210	119	126	245
\$7 but under \$8, . . . .	153	79	232	195	99	294
\$8 but under \$9, . . . .	191	77	268	302	106	407
\$9 but under \$10, . . . .	212	12	224	274	21	295
\$10 but under \$12, . . . .	408	3	411	595	6	601
\$12 but under \$15, . . . .	712	3	715	800	-	800
\$15 but under \$20, . . . .	341	-	341	510	-	510
\$20 and over, . . . . .	97	-	97	93	-	93
TOTALS, . . . . .	2,532	554	3,086	3,187	684	3,871

## ELECTROPLATING. [11 Establishments.]

Under \$5, . . . . .	7	-	7	7	-	7
\$5 but under \$6, . . . .	2	-	2	2	-	2
\$6 but under \$7, . . . .	11	3	14	7	3	10
\$7 but under \$8, . . . .	8	-	8	9	-	9
\$8 but under \$9, . . . .	7	1	8	6	3	9
\$9 but under \$10, . . . .	18	-	18	10	-	10
\$10 but under \$12, . . . .	17	1	18	10	-	10
\$12 but under \$15, . . . .	30	-	30	31	-	31
\$15 but under \$20, . . . .	22	-	22	24	-	24
\$20 and over, . . . . .	19	-	19	7	-	7
TOTALS, . . . . .	141	5	146	113	6	119

## EMERY AND SAND PAPER AND CLOTH, ETC. [10 Establishments.]

Under \$5, . . . . .	21	-	21	16	-	16
\$5 but under \$6, . . . .	14	-	14	5	-	5
\$6 but under \$7, . . . .	6	1	7	17	-	17
\$7 but under \$8, . . . .	16	-	16	6	-	6
\$8 but under \$9, . . . .	2	1	3	3	-	3
\$9 but under \$10, . . . .	74	-	74	163	-	163
\$10 but under \$12, . . . .	124	1	125	152	-	152
\$12 but under \$15, . . . .	69	-	69	90	-	90
\$15 but under \$20, . . . .	47	-	47	56	-	56
\$20 and over, . . . . .	7	-	7	5	-	5
TOTALS, . . . . .	380	3	383	513	-	513

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## FANCY ARTICLES, ETC. [19 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	25	134	159	20	107	127
\$5 but under \$6, . . . .	14	122	136	15	107	122
\$6 but under \$7, . . . .	23	77	100	22	78	100
\$7 but under \$8, . . . .	17	63	80	34	57	91
\$8 but under \$9, . . . .	15	14	29	29	21	50
\$9 but under \$10, . . . .	27	8	35	21	20	41
\$10 but under \$12, . . . .	15	25	40	28	38	66
\$12 but under \$15, . . . .	31	14	45	31	9	40
\$15 but under \$20, . . . .	13	2	15	17	-	17
\$20 and over, . . . . .	5	-	5	1	-	1
TOTALS, . . . . .	185	459	644	218	437	655

## FERTILIZERS. [6 Establishments.]

Under \$5, . . . . .	1	-	1	1	-	1
\$5 but under \$6, . . . .	3	-	3	-	-	-
\$6 but under \$7, . . . .	30	-	30	25	-	25
\$7 but under \$8, . . . .	18	-	18	22	-	22
\$8 but under \$9, . . . .	59	-	59	62	-	62
\$9 but under \$10, . . . .	87	-	87	90	-	90
\$10 but under \$12, . . . .	29	-	29	34	-	34
\$12 but under \$15, . . . .	27	-	27	30	-	30
\$15 but under \$20, . . . .	9	-	9	9	-	9
\$20 and over, . . . . .	6	-	6	6	-	6
TOTALS, . . . . .	269	-	269	279	-	279

## FINE ARTS AND TAXIDERM. [3 Establishments.]

Under \$5, . . . . .	-	-	-	1	-	1
\$5 but under \$6, . . . .	1	1	2	-	-	-
\$6 but under \$7, . . . .	1	-	1	3	-	3
\$7 but under \$8, . . . .	-	-	-	1	-	1
\$8 but under \$9, . . . .	-	-	-	-	-	-
\$9 but under \$10, . . . .	3	-	3	2	-	2
\$10 but under \$12, . . . .	3	-	3	5	1	6
\$12 but under \$15, . . . .	4	-	4	3	-	3
\$15 but under \$20, . . . .	2	-	2	2	-	2
\$20 and over, . . . . .	1	-	1	2	-	2
TOTALS, . . . . .	15	1	16	19	1	20



## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## FIREWORKS AND MATCHES. [4 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . .	6	13	19	3	13	16
\$5 but under \$6, . . . .	21	12	33	19	12	31
\$6 but under \$7, . . . .	6	5	11	7	7	14
\$7 but under \$8, . . . .	11	8	19	7	3	10
\$8 but under \$9, . . . .	1	—	1	4	—	4
\$9 but under \$10, . . . .	20	1	21	13	1	14
\$10 but under \$12, . . . .	10	—	10	13	—	13
\$12 but under \$15, . . . .	6	—	6	6	—	6
\$15 but under \$20, . . . .	8	—	8	9	—	9
\$20 and over, . . . .	3	—	3	3	—	3
TOTALS, . . . .	92	39	131	84	36	120

## FLAX, HEMP, AND JUTE GOODS. [8 Establishments.]

Under \$5, . . . .	103	386	489	105	431	536
\$5 but under \$6, . . . .	40	241	281	49	255	304
\$6 but under \$7, . . . .	57	132	189	71	105	176
\$7 but under \$8, . . . .	72	37	109	70	22	92
\$8 but under \$9, . . . .	54	5	59	53	4	57
\$9 but under \$10, . . . .	50	1	51	60	—	60
\$10 but under \$12, . . . .	67	—	67	48	—	48
\$12 but under \$15, . . . .	55	—	55	54	—	54
\$15 but under \$20, . . . .	22	—	22	32	—	32
\$20 and over, . . . .	10	—	10	8	—	8
TOTALS, . . . .	530	802	1,332	550	817	1,367

## FOOD PREPARATIONS. [347 Establishments.]

Under \$5, . . . .	340	1,731	2,071	350	1,881	2,231
\$5 but under \$6, . . . .	318	535	853	297	662	959
\$6 but under \$7, . . . .	355	485	840	429	517	946
\$7 but under \$8, . . . .	513	158	671	409	127	536
\$8 but under \$9, . . . .	784	96	880	740	87	827
\$9 but under \$10, . . . .	1,356	37	1,393	1,572	30	1,602
\$10 but under \$12, . . . .	1,382	37	1,419	1,381	42	1,423
\$12 but under \$15, . . . .	1,535	12	1,547	1,672	16	1,688
\$15 but under \$20, . . . .	799	5	804	813	11	824
\$20 and over, . . . .	198	—	198	204	—	204
TOTALS, . . . .	7,580	3,096	10,676	7,867	3,373	11,240

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## FURNITURE. [135 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	201	93	294	194	113	307
\$5 but under \$6, . . . . .	157	62	219	180	81	261
\$6 but under \$7, . . . . .	257	199	456	270	147	417
\$7 but under \$8, . . . . .	503	220	723	467	186	653
\$8 but under \$9, . . . . .	426	76	502	541	92	633
\$9 but under \$10, . . . . .	543	47	590	604	47	651
\$10 but under \$12, . . . . .	884	26	910	896	26	922
\$12 but under \$15, . . . . .	1,696	7	1,703	1,533	9	1,542
\$15 but under \$20, . . . . .	701	—	701	673	2	675
\$20 and over, . . . . .	110	—	110	106	—	106
TOTALS, . . . . .	5,478	730	6,208	5,464	703	6,167

## GLASS. [13 Establishments.]

Under \$5, . . . . .	37	2	39	32	3	35
\$5 but under \$6, . . . . .	25	8	33	16	7	23
\$6 but under \$7, . . . . .	22	4	26	21	4	25
\$7 but under \$8, . . . . .	10	2	12	6	2	8
\$8 but under \$9, . . . . .	11	—	11	11	—	11
\$9 but under \$10, . . . . .	19	—	19	18	—	18
\$10 but under \$12, . . . . .	44	—	44	44	—	44
\$12 but under \$15, . . . . .	55	—	55	58	—	58
\$15 but under \$20, . . . . .	65	—	65	70	—	70
\$20 and over, . . . . .	21	—	21	24	—	24
TOTALS, . . . . .	309	16	325	300	16	316

## GLUE, ISINGLASS, AND STARCH. [22 Establishments.]

Under \$5, . . . . .	3	17	20	3	21	24
\$5 but under \$6, . . . . .	4	14	18	5	7	12
\$6 but under \$7, . . . . .	42	1	43	38	1	39
\$7 but under \$8, . . . . .	88	21	109	61	27	88
\$8 but under \$9, . . . . .	48	3	51	51	1	52
\$9 but under \$10, . . . . .	163	1	164	161	1	162
\$10 but under \$12, . . . . .	167	1	168	146	1	147
\$12 but under \$15, . . . . .	41	—	41	38	—	38
\$15 but under \$20, . . . . .	23	—	23	28	—	28
\$20 and over, . . . . .	4	—	4	4	—	4
TOTALS, . . . . .	573	58	631	535	59	594

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## HAIR WORK (ANIMAL AND HUMAN). [4 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	9	34	43	7	29	36
\$5 but under \$6, . . . .	1	32	33	1	11	12
\$6 but under \$7, . . . .	5	2	7	4	10	14
\$7 but under \$8, . . . .	7	2	9	8	3	11
\$8 but under \$9, . . . .	19	-	19	11	-	11
\$9 but under \$10, . . . .	11	2	13	9	2	11
\$10 but under \$12, . . . .	6	2	8	6	2	8
\$12 but under \$15, . . . .	4	-	4	3	-	3
\$15 but under \$20, . . . .	4	1	5	3	-	3
\$20 and over, . . . . .	-	-	-	-	-	-
TOTALS, . . . . .	66	75	141	52	57	109

## HOSE: RUBBER, LINEN, ETC. [6 Establishments.]

Under \$5, . . . . .	66	151	217	136	178	314
\$5 but under \$6, . . . .	30	40	70	20	12	32
\$6 but under \$7, . . . .	100	34	134	24	12	36
\$7 but under \$8, . . . .	154	22	176	98	14	112
\$8 but under \$9, . . . .	87	13	100	75	3	78
\$9 but under \$10, . . . .	89	20	109	136	5	141
\$10 but under \$12, . . . .	103	9	112	80	1	81
\$12 but under \$15, . . . .	84	2	86	68	2	70
\$15 but under \$20, . . . .	110	-	110	102	-	102
\$20 and over, . . . . .	20	-	20	16	-	16
TOTALS, . . . . .	843	291	1,134	755	227	982

## HOSIERY AND KNIT GOODS. [38 Establishments.]

Under \$5, . . . . .	345	1,908	2,243	407	1,833	2,240
\$5 but under \$6, . . . .	139	879	1,018	139	926	1,065
\$6 but under \$7, . . . .	328	741	1,069	352	925	1,277
\$7 but under \$8, . . . .	195	457	652	178	437	615
\$8 but under \$9, . . . .	154	239	393	171	195	366
\$9 but under \$10, . . . .	139	107	246	168	116	284
\$10 but under \$12, . . . .	190	56	246	197	71	268
\$12 but under \$15, . . . .	116	12	128	103	35	138
\$15 but under \$20, . . . .	73	-	73	64	4	68
\$20 and over, . . . . .	41	-	41	52	-	52
TOTALS, . . . . .	1,720	4,394	6,114	1,831	4,592	6,423

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## INK, MUCILAGE, AND PASTE. [7 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	-	13	13	-	22	22
\$5 but under \$6, . . . .	4	8	12	1	10	11
\$6 but under \$7, . . . .	6	2	8	1	1	2
\$7 but under \$8, . . . .	2	2	4	6	-	6
\$8 but under \$9, . . . .	5	1	6	3	2	5
\$9 but under \$10, . . . .	5	1	6	1	3	4
\$10 but under \$12, . . . .	5	1	6	6	-	6
\$12 but under \$15, . . . .	8	-	8	9	1	10
\$15 but under \$20, . . . .	7	-	7	11	-	11
\$20 and over, . . . . .	3	-	3	3	-	3
TOTALS, . . . . .	45	28	73	41	39	80

## IVORY, BONE, SHELL, AND HORN GOODS, ETC. [19 Establishments.]

Under \$5, . . . . .	43	55	98	40	52	92
\$5 but under \$6, . . . .	41	45	86	43	35	78
\$6 but under \$7, . . . .	65	34	99	70	53	123
\$7 but under \$8, . . . .	104	21	125	112	22	134
\$8 but under \$9, . . . .	71	3	74	70	4	74
\$9 but under \$10, . . . .	158	4	162	213	4	217
\$10 but under \$12, . . . .	148	2	150	158	1	159
\$12 but under \$15, . . . .	121	1	122	133	2	135
\$15 but under \$20, . . . .	50	-	50	59	-	59
\$20 and over, . . . . .	4	-	4	2	-	2
TOTALS, . . . . .	805	165	970	900	173	1,073

## JEWELRY. [93 Establishments.]

Under \$5, . . . . .	143	220	363	169	303	472
\$5 but under \$6, . . . .	130	253	383	216	318	534
\$6 but under \$7, . . . .	76	171	247	157	234	391
\$7 but under \$8, . . . .	198	228	426	220	241	461
\$8 but under \$9, . . . .	227	119	346	275	182	457
\$9 but under \$10, . . . .	177	118	295	205	172	377
\$10 but under \$12, . . . .	419	82	501	485	115	600
\$12 but under \$15, . . . .	507	20	527	570	40	610
\$15 but under \$20, . . . .	543	2	545	598	21	619
\$20 and over, . . . . .	219	2	221	275	5	280
TOTALS, . . . . .	2,639	1,215	3,854	3,170	1,631	4,801

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## LEATHER. [95 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	145	7	152	100	3	103
\$5 but under \$6, . . . .	161	5	166	177	4	181
\$6 but under \$7, . . . .	386	22	408	393	19	412
\$7 but under \$8, . . . .	604	3	607	632	5	637
\$8 but under \$9, . . . .	768	—	768	830	—	830
\$9 but under \$10, . . . .	1,631	—	1,631	1,676	—	1,676
\$10 but under \$12, . . . .	1,497	1	1,498	1,435	—	1,435
\$12 but under \$15, . . . .	924	—	924	906	1	907
\$15 but under \$20, . . . .	420	—	420	359	—	359
\$20 and over, . . . . .	91	—	91	88	—	88
TOTALS, . . . . .	6,627	38	6,665	6,496	32	6,528

## LEATHER GOODS. [30 Establishments.]

Under \$5, . . . . .	56	70	126	54	47	101
\$5 but under \$6, . . . .	24	28	52	34	48	82
\$6 but under \$7, . . . .	86	41	77	43	51	94
\$7 but under \$8, . . . .	68	87	155	56	98	154
\$8 but under \$9, . . . .	59	32	91	77	46	123
\$9 but under \$10, . . . .	77	13	90	106	17	123
\$10 but under \$12, . . . .	183	6	189	226	7	233
\$12 but under \$15, . . . .	156	—	156	154	—	154
\$15 but under \$20, . . . .	64	—	64	75	—	75
\$20 and over, . . . . .	20	—	20	23	—	23
TOTALS, . . . . .	743	277	1,020	848	314	1,162

## LIQUORS (BOTTLED) AND CARBONATED BEVERAGES. [29 Establishments.]

Under \$5, . . . . .	10	2	12	9	—	9
\$5 but under \$6, . . . .	7	—	7	5	—	5
\$6 but under \$7, . . . .	17	—	17	16	1	17
\$7 but under \$8, . . . .	48	2	50	35	1	36
\$8 but under \$9, . . . .	59	—	59	53	2	55
\$9 but under \$10, . . . .	44	—	44	47	—	47
\$10 but under \$12, . . . .	83	—	83	72	—	72
\$12 but under \$15, . . . .	110	—	110	92	—	92
\$15 but under \$20, . . . .	35	—	35	56	—	56
\$20 and over, . . . . .	4	—	4	8	—	8
TOTALS, . . . . .	417	4	421	393	4	397

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## LIQUORS (MALT). [31 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	5	—	5	7	—	7
\$5 but under \$6, . . . .	6	—	6	8	—	8
\$6 but under \$7, . . . .	15	—	15	7	—	7
\$7 but under \$8, . . . .	18	—	18	7	—	7
\$8 but under \$9, . . . .	12	—	12	2	—	2
\$9 but under \$10, . . . .	58	—	58	77	—	77
\$10 but under \$12, . . . .	46	—	46	64	—	64
\$12 but under \$15, . . . .	307	—	307	310	—	310
\$15 but under \$20, . . . .	1,001	—	1,001	1,001	—	1,001
\$20 and over, . . . . .	127	—	127	136	—	136
TOTALS, . . . . .	1,595	—	1,595	1,614	—	1,614

## LIQUORS (DISTILLED). [6 Establishments.]

Under \$5, . . . . .	—	—	—	—	—	—
\$5 but under \$6, . . . .	—	—	—	—	—	—
\$6 but under \$7, . . . .	1	—	1	1	—	1
\$7 but under \$8, . . . .	—	—	—	—	—	—
\$8 but under \$9, . . . .	—	—	—	—	—	—
\$9 but under \$10, . . . .	3	—	3	3	—	3
\$10 but under \$12, . . . .	7	—	7	6	—	6
\$12 but under \$15, . . . .	6	—	6	8	—	8
\$15 but under \$20, . . . .	12	—	12	10	—	10
\$20 and over, . . . . .	3	—	3	1	—	1
TOTALS, . . . . .	32	—	32	29	—	29

## LUMBER. [29 Establishments.]

Under \$5, . . . . .	36	3	39	17	3	20
\$5 but under \$6, . . . .	10	—	10	25	—	25
\$6 but under \$7, . . . .	37	4	41	44	5	49
\$7 but under \$8, . . . .	111	1	112	129	1	130
\$8 but under \$9, . . . .	216	—	216	158	—	158
\$9 but under \$10, . . . .	199	—	199	231	—	231
\$10 but under \$12, . . . .	124	1	125	162	1	163
\$12 but under \$15, . . . .	79	—	79	96	—	96
\$15 but under \$20, . . . .	61	—	61	75	—	75
\$20 and over, . . . . .	21	—	21	19	—	19
TOTALS, . . . . .	894	9	903	956	10	966

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## MACHINES AND MACHINERY. [359 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	1,256	72	1,328	1,208	75	1,283
\$5 but under \$6, . . . .	872	74	946	1,105	63	1,168
\$6 but under \$7, . . . .	1,224	70	1,294	1,125	72	1,197
\$7 but under \$8, . . . .	1,849	59	1,908	1,706	54	1,760
\$8 but under \$9, . . . .	1,864	26	1,890	1,717	33	1,750
\$9 but under \$10, . . . .	2,482	24	2,506	2,533	24	2,557
\$10 but under \$12, . . . .	3,335	9	3,344	3,299	4	3,303
\$12 but under \$15, . . . .	4,473	—	4,473	4,662	—	4,662
\$15 but under \$20, . . . .	3,209	3	3,212	3,288	2	3,290
\$20 and over, . . . . .	716	—	716	722	—	722
TOTALS, . . . . .	21,280	337	21,617	21,365	327	21,692

## METALS AND METALLIC GOODS. [380 Establishments.]

Under \$5, . . . . .	912	444	1,356	997	489	1,486
\$5 but under \$6, . . . .	608	345	953	656	343	999
\$6 but under \$7, . . . .	955	412	1,367	938	453	1,391
\$7 but under \$8, . . . .	1,008	153	1,161	1,001	185	1,186
\$8 but under \$9, . . . .	1,062	55	1,107	983	87	1,070
\$9 but under \$10, . . . .	1,683	61	1,744	1,885	39	1,924
\$10 but under \$12, . . . .	2,043	50	2,093	2,209	39	2,248
\$12 but under \$15, . . . .	2,609	6	2,615	2,668	7	2,675
\$15 but under \$20, . . . .	2,376	4	2,380	2,444	2	2,446
\$20 and over, . . . . .	729	2	731	686	3	689
TOTALS, . . . . .	13,975	1,532	15,507	14,467	1,647	16,114

## MODELS, LASTS, AND PATTERNS. [42 Establishments.]

Under \$5, . . . . .	12	2	14	9	1	10
\$5 but under \$6, . . . .	9	—	9	6	—	6
\$6 but under \$7, . . . .	18	—	18	33	—	33
\$7 but under \$8, . . . .	14	—	14	25	—	25
\$8 but under \$9, . . . .	17	—	17	12	—	12
\$9 but under \$10, . . . .	40	—	40	53	—	53
\$10 but under \$12, . . . .	62	—	62	61	—	61
\$12 but under \$15, . . . .	117	—	117	116	—	116
\$15 but under \$20, . . . .	192	—	192	155	—	155
\$20 and over, . . . . .	87	—	87	114	—	114
TOTALS, . . . . .	568	2	570	584	1	585

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## MUSICAL INSTRUMENTS AND MATERIALS. [64 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Male	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	163	74	237	166	83	249
\$5 but under \$6, . . . . .	100	41	141	100	57	157
\$6 but under \$7, . . . . .	140	43	183	134	29	163
\$7 but under \$8, . . . . .	134	9	143	144	8	152
\$8 but under \$9, . . . . .	112	2	114	133	2	135
\$9 but under \$10, . . . . .	201	2	203	218	2	220
\$10 but under \$12, . . . . .	338	—	338	346	1	347
\$12 but under \$15, . . . . .	629	2	631	755	2	757
\$15 but under \$20, . . . . .	726	—	726	686	—	686
\$20 and over, . . . . .	187	—	187	169	—	169
TOTALS, . . . . .	2,730	173	2,903	2,851	184	3,035

## OILS AND ILLUMINATING FLUIDS. [8 Establishments.]

Under \$5, . . . . .	9	1	10	4	2	6
\$5 but under \$6, . . . . .	—	1	1	1	—	1
\$6 but under \$7, . . . . .	4	8	12	4	7	11
\$7 but under \$8, . . . . .	—	—	—	2	1	3
\$8 but under \$9, . . . . .	2	—	2	1	—	1
\$9 but under \$10, . . . . .	21	—	21	16	—	16
\$10 but under \$12, . . . . .	44	—	44	27	—	27
\$12 but under \$15, . . . . .	29	—	29	37	—	37
\$15 but under \$20, . . . . .	6	—	6	10	—	10
\$20 and over, . . . . .	—	—	—	—	—	—
TOTALS, . . . . .	115	10	125	102	10	112

## PAINTS, COLORS, AND CRUDE CHEMICALS. [29 Establishments.]

Under \$5, . . . . .	11	3	14	12	4	16
\$5 but under \$6, . . . . .	7	8	15	8	8	16
\$6 but under \$7, . . . . .	8	1	9	9	3	12
\$7 but under \$8, . . . . .	9	8	17	15	5	20
\$8 but under \$9, . . . . .	7	—	7	6	—	6
\$9 but under \$10, . . . . .	69	1	70	70	1	71
\$10 but under \$12, . . . . .	66	1	67	58	2	60
\$12 but under \$15, . . . . .	74	—	74	76	—	76
\$15 but under \$20, . . . . .	32	—	32	22	—	22
\$20 and over, . . . . .	17	—	17	21	—	21
TOTALS, . . . . .	300	22	322	297	23	320



## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## PAPER. [80 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	162	944	1,106	150	846	996
\$5 but under \$6, . . . .	83	970	1,053	94	1,054	1,148
\$6 but under \$7, . . . .	233	1,070	1,303	236	1,104	1,340
\$7 but under \$8, . . . .	469	423	892	508	375	883
\$8 but under \$9, . . . .	611	149	760	690	185	875
\$9 but under \$10, . . . .	1,297	65	1,362	1,431	63	1,494
\$10 but under \$12, . . . .	830	14	844	792	18	810
\$12 but under \$15, . . . .	877	16	893	861	13	874
\$15 but under \$20, . . . .	640	5	645	656	5	661
\$20 and over, . . . . .	147	—	147	146	—	146
TOTALS, . . . . .	5,349	3,656	9,005	5,564	3,663	9,227

## PAPER GOODS. [84 Establishments.]

Under \$5, . . . . .	138	470	608	155	434	589
\$5 but under \$6, . . . .	64	350	414	74	377	451
\$6 but under \$7, . . . .	89	315	404	93	303	396
\$7 but under \$8, . . . .	111	274	385	121	318	439
\$8 but under \$9, . . . .	74	145	219	67	145	212
\$9 but under \$10, . . . .	171	54	225	184	89	273
\$10 but under \$12, . . . .	216	20	236	201	27	228
\$12 but under \$15, . . . .	226	3	229	236	6	242
\$15 but under \$20, . . . .	181	2	183	184	1	185
\$20 and over, . . . . .	46	—	46	49	1	50
TOTALS, . . . . .	1,316	1,633	2,949	1,364	1,701	3,065

## PERFUMES, TOILET ARTICLES, ETC. [5 Establishments.]

Under \$5, . . . . .	—	3	3	2	3	5
\$5 but under \$6, . . . .	2	6	8	2	8	10
\$6 but under \$7, . . . .	1	6	7	—	3	3
\$7 but under \$8, . . . .	—	1	1	—	—	—
\$8 but under \$9, . . . .	1	2	3	1	1	2
\$9 but under \$10, . . . .	1	1	2	1	—	1
\$10 but under \$12, . . . .	2	—	2	1	1	2
\$12 but under \$15, . . . .	1	—	1	2	—	2
\$15 but under \$20, . . . .	5	—	5	4	—	4
\$20 and over, . . . . .	—	—	—	—	—	—
TOTALS, . . . . .	13	19	32	13	16	29

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## PHOTOGRAPHS AND PHOTOGRAPHIC MATERIALS. [24 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	14	7	21	12	9	21
\$5 but under \$6, . . . . .	2	11	13	5	3	8
\$6 but under \$7, . . . . .	12	28	40	5	25	30
\$7 but under \$8, . . . . .	5	13	18	4	16	20
\$8 but under \$9, . . . . .	4	14	18	6	18	24
\$9 but under \$10, . . . . .	10	12	22	11	12	23
\$10 but under \$12, . . . . .	21	9	30	18	12	30
\$12 but under \$15, . . . . .	27	8	35	29	10	39
\$15 but under \$20, . . . . .	34	7	41	32	11	43
\$20 and over, . . . . .	28	1	29	30	2	32
TOTALS, . . . . .	157	110	267	152	118	270

## POLISHES AND DRESSING. [26 Establishments.]

Under \$5, . . . . .	6	63	69	4	62	66
\$5 but under \$6, . . . . .	1	55	56	3	69	72
\$6 but under \$7, . . . . .	6	30	36	4	29	33
\$7 but under \$8, . . . . .	6	6	12	4	8	12
\$8 but under \$9, . . . . .	2	7	9	4	8	12
\$9 but under \$10, . . . . .	9	1	10	16	—	16
\$10 but under \$12, . . . . .	23	1	24	17	1	18
\$12 but under \$15, . . . . .	30	—	30	39	—	39
\$15 but under \$20, . . . . .	27	—	27	24	—	24
\$20 and over, . . . . .	7	—	7	7	—	7
TOTALS, . . . . .	117	163	280	122	177	299

## PRINTING, PUBLISHING, AND BOOKBINDING. [62 Establishments.]

Under \$5, . . . . .	324	363	687	420	476	896
\$5 but under \$6, . . . . .	160	253	413	140	253	393
\$6 but under \$7, . . . . .	154	361	515	190	315	505
\$7 but under \$8, . . . . .	115	235	350	125	280	405
\$8 but under \$9, . . . . .	109	160	269	127	204	331
\$9 but under \$10, . . . . .	172	100	272	177	104	281
\$10 but under \$12, . . . . .	294	118	412	303	142	445
\$12 but under \$15, . . . . .	425	45	470	431	60	491
\$15 but under \$20, . . . . .	532	21	553	630	15	645
\$20 and over, . . . . .	389	3	392	398	4	402
TOTALS, . . . . .	2,674	1,659	4,333	2,941	1,853	4,794

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## PRINT WORKS, DYE WORKS, AND BLEACHERIES. [49 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . .	502	162	664	521	229	750
\$5 but under \$6, . . . .	320	366	685	293	322	615
\$6 but under \$7, . . . .	779	467	1,246	670	494	1,164
\$7 but under \$8, . . . .	1,329	121	1,450	1,343	140	1,483
\$8 but under \$9, . . . .	590	32	622	644	30	674
\$9 but under \$10, . . . .	510	30	540	540	42	582
\$10 but under \$12, . . . .	393	32	425	436	10	446
\$12 but under \$15, . . . .	370	5	375	367	4	371
\$15 but under \$20, . . . .	184	—	184	198	—	198
\$20 and over, . . . .	283	—	283	309	—	309
TOTALS, . . . .	5,260	1,214	6,474	5,321	1,271	6,592

## RAILROAD CONSTRUCTION AND EQUIPMENT. [16 Establishments.]

Under \$5, . . . .	29	—	29	2	—	2
\$5 but under \$6, . . . .	56	—	56	12	—	12
\$6 but under \$7, . . . .	91	—	91	40	—	40
\$7 but under \$8, . . . .	78	—	78	72	—	72
\$8 but under \$9, . . . .	227	—	227	251	—	251
\$9 but under \$10, . . . .	465	—	465	447	—	447
\$10 but under \$12, . . . .	494	—	494	501	—	501
\$12 but under \$15, . . . .	1,165	—	1,165	1,186	—	1,186
\$15 but under \$20, . . . .	405	—	405	379	—	379
\$20 and over, . . . .	33	—	33	31	—	31
TOTALS, . . . .	3,043	—	3,043	2,921	—	2,921

## RUBBER AND ELASTIC GOODS. [47 Establishments.]

Under \$5, . . . .	252	826	1,078	308	1,054	1,362
\$5 but under \$6, . . . .	163	559	722	150	588	738
\$6 but under \$7, . . . .	269	885	1,154	234	721	955
\$7 but under \$8, . . . .	442	853	1,295	411	733	1,144
\$8 but under \$9, . . . .	654	801	1,455	524	665	1,189
\$9 but under \$10, . . . .	1,358	404	1,762	1,216	651	1,867
\$10 but under \$12, . . . .	824	312	1,136	950	439	1,389
\$12 but under \$15, . . . .	941	106	1,046	1,037	117	1,154
\$15 but under \$20, . . . .	500	16	516	889	11	900
\$20 and over, . . . .	218	1	219	183	1	184
TOTALS, . . . .	5,621	4,762	10,383	5,902	4,980	10,882

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## SADDLERY AND HARNESS. [35 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	6	—	6	7	—	7
\$5 but under \$6, . . . .	5	—	5	8	—	8
\$6 but under \$7, . . . .	9	9	18	13	10	23
\$7 but under \$8, . . . .	24	7	31	23	7	30
\$8 but under \$9, . . . .	16	4	20	25	4	29
\$9 but under \$10, . . . .	72	2	74	47	1	48
\$10 but under \$12, . . . .	82	1	83	87	—	87
\$12 but under \$15, . . . .	101	1	102	109	1	110
\$15 but under \$20, . . . .	42	—	42	37	—	37
\$20 and over, . . . . .	6	—	6	4	—	4
TOTALS, . . . . .	363	24	387	355	23	378

## SCIENTIFIC INSTRUMENTS AND APPLIANCES. [20 Establishments.]

Under \$5, . . . . .	149	108	257	115	141	256
\$5 but under \$6, . . . .	74	42	116	89	78	167
\$6 but under \$7, . . . .	115	55	170	134	49	183
\$7 but under \$8, . . . .	109	7	116	124	15	139
\$8 but under \$9, . . . .	107	7	114	132	6	138
\$9 but under \$10, . . . .	168	1	164	172	2	174
\$10 but under \$12, . . . .	177	3	180	163	2	165
\$12 but under \$15, . . . .	159	1	160	139	1	140
\$15 but under \$20, . . . .	108	—	108	117	—	117
\$20 and over, . . . . .	45	—	45	34	—	34
TOTALS, . . . . .	1,206	224	1,430	1,219	294	1,513

## SHIPBUILDING. [46 Establishments.]

Under \$5, . . . . .	30	—	30	14	—	14
\$5 but under \$6, . . . .	15	—	15	14	—	14
\$6 but under \$7, . . . .	30	—	30	29	—	29
\$7 but under \$8, . . . .	64	—	64	35	—	35
\$8 but under \$9, . . . .	60	—	60	40	—	40
\$9 but under \$10, . . . .	161	—	161	149	—	149
\$10 but under \$12, . . . .	180	—	180	273	—	273
\$12 but under \$15, . . . .	274	—	274	276	—	276
\$15 but under \$20, . . . .	433	—	433	350	—	350
\$20 and over, . . . . .	33	—	33	57	—	57
TOTALS, . . . . .	1,280	—	1,280	1,237	—	1,237

## WAGES PAID: BY INDUSTRIES—Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES—1897, 1898  
—Continued.

## SILK AND SILK GOODS. [11 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . .	71	514	585	99	700	789
\$5 but under \$6, . . . .	60	390	450	80	366	446
\$6 but under \$7, . . . .	93	317	410	118	262	380
\$7 but under \$8, . . . .	74	171	245	99	141	240
\$8 but under \$9, . . . .	84	102	186	110	103	213
\$9 but under \$10, . . . .	89	71	160	99	68	167
\$10 but under \$12, . . . .	161	66	227	148	113	261
\$12 but under \$15, . . . .	118	15	133	132	22	154
\$15 but under \$20, . . . .	68	—	68	72	—	72
\$20 and over, . . . .	21	—	21	25	—	25
TOTALS, . . . .	839	1,646	2,485	972	1,775	2,747

## SPORTING AND ATHLETIC GOODS. [5 Establishments.]

Under \$5, . . . .	16	14	30	19	11	30
\$5 but under \$6, . . . .	9	15	24	8	10	18
\$6 but under \$7, . . . .	12	6	18	10	9	19
\$7 but under \$8, . . . .	17	6	23	12	7	19
\$8 but under \$9, . . . .	24	2	26	11	2	13
\$9 but under \$10, . . . .	20	1	21	19	1	20
\$10 but under \$12, . . . .	38	—	38	26	—	26
\$12 but under \$15, . . . .	59	—	59	67	—	67
\$15 but under \$20, . . . .	26	—	26	24	—	24
\$20 and over, . . . .	2	—	2	3	—	3
TOTALS, . . . .	223	44	267	199	40	239

## STONE. AGGREGATES.\* [196 Establishments.]

Under \$5, . . . .	120	—	120	109	—	109
\$5 but under \$6, . . . .	87	—	87	99	—	99
\$6 but under \$7, . . . .	220	—	220	221	—	221
\$7 but under \$8, . . . .	273	—	273	376	—	376
\$8 but under \$9, . . . .	330	—	330	380	—	380
\$9 but under \$10, . . . .	943	—	943	973	—	973
\$10 but under \$12, . . . .	1,071	—	1,071	932	—	932
\$12 but under \$15, . . . .	1,213	—	1,213	1,176	—	1,176
\$15 but under \$20, . . . .	1,568	—	1,568	1,431	—	1,431
\$20 and over, . . . .	167	—	167	147	—	147
TOTALS, . . . .	5,992	—	5,992	5,844	—	5,844

\* These figures include the classified weekly earnings reported in Stone (Quarried) and Stone (Cut and Monumental).

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## STONE (QUARRIED). [51 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	68	-	68	55	-	55
\$5 but under \$6, . . . .	27	-	27	41	-	41
\$6 but under \$7, . . . .	130	-	130	135	-	135
\$7 but under \$8, . . . .	182	-	182	275	-	275
\$8 but under \$9, . . . .	262	-	262	300	-	300
\$9 but under \$10, . . . .	714	-	714	759	-	759
\$10 but under \$12, . . . .	697	-	697	580	-	580
\$12 but under \$15, . . . .	562	-	562	567	-	567
\$15 but under \$20, . . . .	482	-	482	501	-	501
\$20 and over, . . . . .	42	-	42	38	-	38
TOTALS, . . . . .	3,166	-	3,166	3,251	-	3,251

## STONE (CUT AND MONUMENTAL). [145 Establishments.]

Under \$5, . . . . .	52	-	52	54	-	54
\$5 but under \$6, . . . .	60	-	60	58	-	58
\$6 but under \$7, . . . .	90	-	90	86	-	86
\$7 but under \$8, . . . .	91	-	91	101	-	101
\$8 but under \$9, . . . .	68	-	68	80	-	80
\$9 but under \$10, . . . .	229	-	229	214	-	214
\$10 but under \$12, . . . .	374	-	374	352	-	352
\$12 but under \$15, . . . .	661	-	661	609	-	609
\$15 but under \$20, . . . .	1,086	-	1,086	980	-	980
\$20 and over, . . . . .	125	-	125	109	-	109
TOTALS, . . . . .	2,536	-	2,536	2,593	-	2,593

## STRAW AND PALM LEAF GOODS. [17 Establishments.]

Under \$5, . . . . .	30	309	339	33	292	325
\$5 but under \$6, . . . .	38	273	311	37	245	282
\$6 but under \$7, . . . .	76	278	354	82	298	380
\$7 but under \$8, . . . .	129	360	479	113	418	531
\$8 but under \$9, . . . .	129	424	553	136	410	546
\$9 but under \$10, . . . .	282	386	668	277	381	658
\$10 but under \$12, . . . .	302	371	673	297	423	720
\$12 but under \$15, . . . .	260	331	591	282	384	666
\$15 but under \$20, . . . .	189	159	348	156	99	255
\$20 and over, . . . . .	57	52	109	53	22	75
TOTALS, . . . . .	1,482	2,933	4,415	1,466	2,972	4,438

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## TALLOW, CANDLES, SOAP, AND GREASE. [66 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	21	44	65	63	61	124
\$5 but under \$6, . . . .	16	24	40	10	13	23
\$6 but under \$7, . . . .	18	6	24	22	10	32
\$7 but under \$8, . . . .	53	5	58	50	5	55
\$8 but under \$9, . . . .	52	—	52	43	1	44
\$9 but under \$10, . . . .	207	—	207	201	—	201
\$10 but under \$12, . . . .	224	1	225	200	1	201
\$12 but under \$15, . . . .	130	—	130	141	1	142
\$15 but under \$20, . . . .	87	—	87	87	—	87
\$20 and over, . . . . .	21	—	21	18	—	18
TOTALS, . . . . .	829	80	909	835	92	927

## TOBACCO, SNUFF, AND CIGARS. [63 Establishments.]

Under \$5, . . . . .	51	137	188	77	189	266
\$5 but under \$6, . . . .	17	135	152	28	151	179
\$6 but under \$7, . . . .	28	147	175	35	141	176
\$7 but under \$8, . . . .	31	74	105	37	87	124
\$8 but under \$9, . . . .	35	27	62	52	23	80
\$9 but under \$10, . . . .	57	10	67	73	6	84
\$10 but under \$12, . . . .	123	32	160	188	23	211
\$12 but under \$15, . . . .	401	41	442	425	39	464
\$15 but under \$20, . . . .	544	13	557	561	15	576
\$20 and over, . . . . .	282	—	282	282	3	285
TOTALS, . . . . .	1,574	616	2,190	1,763	682	2,445

## TOYS AND GAMES (CHILDREN'S). [10 Establishments.]

Under \$5, . . . . .	61	34	95	59	24	83
\$5 but under \$6, . . . .	48	23	71	45	21	66
\$6 but under \$7, . . . .	65	30	95	71	22	93
\$7 but under \$8, . . . .	72	14	86	88	20	108
\$8 but under \$9, . . . .	63	8	71	83	8	91
\$9 but under \$10, . . . .	66	5	71	44	10	54
\$10 but under \$12, . . . .	46	4	50	63	3	66
\$12 but under \$15, . . . .	48	—	48	48	1	49
\$15 but under \$20, . . . .	30	—	30	18	—	18
\$20 and over, . . . . .	8	—	8	10	—	10
TOTALS, . . . . .	507	118	625	529	109	638

## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## TRUNKS AND VALISES. [7 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	8	2	10	4	2	6
\$5 but under \$6, . . . . .	—	—	—	1	4	5
\$6 but under \$7, . . . . .	3	2	5	3	2	5
\$7 but under \$8, . . . . .	9	3	12	2	—	2
\$8 but under \$9, . . . . .	—	—	—	6	—	6
\$9 but under \$10, . . . . .	6	—	6	5	—	5
\$10 but under \$12, . . . . .	15	1	16	18	1	19
\$12 but under \$15, . . . . .	20	—	20	19	—	19
\$15 but under \$20, . . . . .	13	—	13	12	—	12
\$20 and over, . . . . .	1	—	1	1	—	1
TOTALS, . . . . .	75	8	83	71	9	80

## WHIPS, LASHES, AND STOCKS. [14 Establishments.]

Under \$5, . . . . .	39	27	66	45	32	77
\$5 but under \$6, . . . . .	11	36	47	17	46	63
\$6 but under \$7, . . . . .	24	14	38	25	20	45
\$7 but under \$8, . . . . .	22	27	49	25	35	60
\$8 but under \$9, . . . . .	56	17	73	70	15	85
\$9 but under \$10, . . . . .	37	7	44	56	4	60
\$10 but under \$12, . . . . .	65	10	75	75	5	80
\$12 but under \$15, . . . . .	38	—	38	54	—	54
\$15 but under \$20, . . . . .	21	—	21	30	—	30
\$20 and over, . . . . .	4	—	4	3	—	3
TOTALS, . . . . .	317	138	455	400	157	557

## WOODEN GOODS. [73 Establishments.]

Under \$5, . . . . .	59	14	73	72	12	84
\$5 but under \$6, . . . . .	32	14	46	36	16	52
\$6 but under \$7, . . . . .	97	16	113	102	12	114
\$7 but under \$8, . . . . .	159	12	171	176	6	182
\$8 but under \$9, . . . . .	347	8	355	358	9	367
\$9 but under \$10, . . . . .	221	3	224	221	5	226
\$10 but under \$12, . . . . .	161	5	166	140	7	147
\$12 but under \$15, . . . . .	220	4	224	228	3	231
\$15 but under \$20, . . . . .	177	4	181	207	3	210
\$20 and over, . . . . .	32	3	35	32	3	35
TOTALS, . . . . .	1,505	83	1,588	1,572	76	1,648



## WAGES PAID: BY INDUSTRIES — Continued.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Continued.

## WOOLLEN GOODS. AGGREGATES.\* [142 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	1,363	2,046	3,409	1,326	2,005	3,331
\$5 but under \$6, . . . .	1,185	1,498	2,683	1,116	1,432	2,548
\$6 but under \$7, . . . .	2,202	1,501	3,703	2,195	1,502	3,697
\$7 but under \$8, . . . .	2,378	1,204	3,582	2,412	1,289	3,701
\$8 but under \$9, . . . .	1,574	880	2,454	1,687	845	2,532
\$9 but under \$10, . . . .	1,859	416	2,275	1,868	486	2,354
\$10 but under \$12, . . . .	1,533	230	1,763	1,769	274	2,043
\$12 but under \$15, . . . .	1,012	58	1,070	1,088	71	1,159
\$15 but under \$20, . . . .	426	4	430	478	4	482
\$20 and over, . . . . .	214	—	214	227	—	227
TOTALS, . . . . .	13,746	7,787	21,533	14,166	7,908	22,074

## WOOLLEN GOODS (WOVEN GOODS AND YARN). [126 Establishments.]

Under \$5, . . . . .	1,358	2,023	3,381	1,323	1,987	3,310
\$5 but under \$6, . . . .	1,172	1,487	2,659	1,106	1,417	2,522
\$6 but under \$7, . . . .	2,169	1,451	3,620	2,165	1,454	3,619
\$7 but under \$8, . . . .	2,318	1,201	3,519	2,348	1,278	3,626
\$8 but under \$9, . . . .	1,549	830	2,379	1,663	844	2,507
\$9 but under \$10, . . . .	1,780	415	2,195	1,794	486	2,280
\$10 but under \$12, . . . .	1,508	230	1,738	1,736	273	2,009
\$12 but under \$15, . . . .	996	57	1,053	1,075	70	1,145
\$15 but under \$20, . . . .	414	4	418	462	4	466
\$20 and over, . . . . .	210	—	210	223	—	223
TOTALS, . . . . .	13,474	7,698	21,172	13,894	7,813	21,707

## WOOLLEN GOODS (SHODDY, WASTE, ETC.). [16 Establishments.]

Under \$5, . . . . .	5	23	28	3	18	21
\$5 but under \$6, . . . .	13	11	24	11	15	26
\$6 but under \$7, . . . .	33	50	83	30	48	78
\$7 but under \$8, . . . .	60	3	63	64	11	75
\$8 but under \$9, . . . .	25	—	25	24	1	25
\$9 but under \$10, . . . .	79	1	80	74	—	74
\$10 but under \$12, . . . .	25	—	25	33	1	34
\$12 but under \$15, . . . .	16	1	17	13	1	14
\$15 but under \$20, . . . .	12	—	12	16	—	16
\$20 and over, . . . . .	4	—	4	4	—	4
TOTALS, . . . . .	272	89	361	272	95	367

\* These figures include the classified weekly earnings reported in Woollen Goods (Woven Goods and Yarn) and Woollen Goods (Shoddy, Waste, etc.).

## WAGES PAID: BY INDUSTRIES — Concluded.

CLASSIFIED WEEKLY EARNINGS: BY INDUSTRIES — 1897, 1898  
— Concluded.

## WORSTED GOODS. [35 Establishments.]

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	785	1,370	2,155	832	1,609	2,441
\$5 but under \$6, . . . .	752	1,879	2,631	824	1,817	2,641
\$6 but under \$7, . . . .	1,158	1,604	2,852	1,328	1,752	3,080
\$7 but under \$8, . . . .	1,279	665	1,934	1,377	716	2,093
\$8 but under \$9, . . . .	664	373	1,037	661	412	1,073
\$9 but under \$10, . . . .	767	234	1,001	797	224	1,021
\$10 but under \$12, . . . .	1,142	225	1,367	948	179	1,127
\$12 but under \$15, . . . .	790	35	824	817	54	871
\$15 but under \$20, . . . .	202	6	208	242	10	252
\$20 and over, . . . . .	107	2	109	123	1	124
TOTALS, . . . . .	7,645	6,473	14,118	7,949	6,774	14,723

## ALL INDUSTRIES. [4,701 Establishments.]

Under \$5, . . . . .	21,217	33,328	54,545	23,269	37,015	60,284
\$5 but under \$6, . . . .	14,232	23,785	38,017	15,767	24,322	40,089
\$6 but under \$7, . . . .	21,507	23,562	45,069	21,993	23,527	45,520
\$7 but under \$8, . . . .	23,324	17,216	40,540	24,349	17,479	41,828
\$8 but under \$9, . . . .	22,717	12,276	34,993	23,210	11,318	34,528
\$9 but under \$10, . . . .	30,329	6,899	37,228	31,157	6,677	37,834
\$10 but under \$12, . . . .	35,354	5,363	40,717	35,733	5,487	41,220
\$12 but under \$15, . . . .	41,339	2,636	43,975	40,242	2,891	43,133
\$15 but under \$20, . . . .	29,588	737	30,375	29,904	720	30,624
\$20 and over, . . . . .	9,412	130	9,542	9,396	103	9,504
TOTALS, . . . . .	249,019	125,982	375,001	255,020	129,544	384,564



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**PROPORTION OF BUSINESS DONE**  
**AND**  
**DAYS IN OPERATION:**  
  
**BY INDUSTRIES.**

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# PROPORTION OF BUSINESS DONE: BY INDUSTRIES.

## 1897, 1898.

[The figures given in this presentation represent the average proportion of business done by each establishment in the industries considered. Greatest capacity, or maximum production, has been considered as 100 per cent, and the percentages given indicate the average proportion of business done by each establishment during each year on the basis stated. Comparison is made between 1897 and 1898, and the relative increase or decrease in 1898 as compared with 1897 is given with its equivalent percentage.]

INDUSTRIES.	Number of Establishments Considered	AVERAGE PROPORTION OF BUSINESS DONE		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Proportion	Percentages
Agricultural implements, . . . . .	9	58.67	57.00	+3.33	+6.20
Arms and ammunition, . . . . .	14	50.14	63.29	+13.15	+26.23
Artisans' tools, . . . . .	73	54.90	55.95	+1.05	+1.91
Awings, sails, tents, etc., . . . . .	42	44.69	47.55	+2.86	+6.40
Bicycles, tricycles, etc., . . . . .	18	53.44	42.72	-10.72	-20.06
Boots and shoes, . . . . .	644	61.35	59.88	-1.47	-2.40
Boots and shoes (factory product), . . . . .	430	61.92	61.24	-0.68	-1.10
Soles, heels, and cut stock, . . . . .	183	59.93	56.31	-3.62	-6.04
Boot and shoe findings, . . . . .	18	65.39	67.50	+2.11	+3.23
Stitching, heelings, etc., . . . . .	13	56.92	54.95	-1.97	-3.44
Boxes, barrels, kegs, etc., . . . . .	122	58.34	60.78	+2.44	+4.18
Boxes (paper), . . . . .	62	63.52	64.03	+0.51	+0.80
Brick, tiles, and sewer pipe, . . . . .	56	66.27	61.16	-5.11	-7.71
Brooms, brushes, and mops, . . . . .	23	58.17	65.48	+7.31	+12.57
Building materials, . . . . .	67	59.47	57.14	-2.33	-3.92
Burial cases, caskets, coffins, etc., . . . . .	6	79.67	77.00	-2.67	-3.35
Buttons and dress trimmings, . . . . .	13	44.92	44.85	-0.07	-0.16
Carpetings, . . . . .	12	67.33	66.83	-0.50	-0.74
Textile, . . . . .	8	73.38	70.75	-2.63	-3.58
Other, . . . . .	4	55.25	59.00	+3.75	+6.79
Carriages and wagons, . . . . .	136	56.41	54.46	-1.95	-3.46
Cement, kaolin, lime, and plaster, . . . . .	9	68.22	69.22	+1.00	+1.47
Chemical preparations (compounded), . . . . .	15	60.80	59.53	-1.27	-2.09
Clocks and watches, . . . . .	12	43.67	57.75	+14.08	+32.24
Clothing, . . . . .	152	65.24	65.75	+0.51	+0.78
Cooking, lighting, and heating apparatus, . . . . .	43	59.63	61.51	+1.88	+3.15
Cordage and twine, . . . . .	23	64.43	64.43	*	*
Cotton goods, . . . . .	169	81.83	84.42	+2.59	+3.17
Cotton goods (woven), . . . . .	120	84.46	85.14	+0.68	+0.81
Cotton yarn and thread, . . . . .	41	75.22	81.83	+6.61	+8.79
Cotton waste, . . . . .	8	76.38	86.88	+10.50	+13.75
Crayons, pencils, crucibles, etc., . . . . .	3	73.33	79.00	+5.67	+7.73
Drugs and medicines, . . . . .	25	49.48	54.52	+5.04	+10.19
Dyestuffs, . . . . .	6	52.83	61.00	+8.17	+15.46
Earthen, plaster, and stone ware, . . . . .	6	58.33	63.83	+5.50	+9.43
Electrical apparatus and appliances, . . . . .	21	60.95	61.48	+0.53	+0.87
Electroplating, . . . . .	11	56.18	61.55	+5.37	+9.56
Emery and sand paper and cloth, etc., . . . . .	10	66.80	69.80	+3.00	+4.49
Fancy articles, etc., . . . . .	19	60.42	58.05	-2.37	-3.92
Fertilizers, . . . . .	6	62.67	65.00	+2.33	+3.72

\* No change.

PROPORTION OF BUSINESS DONE: BY INDUSTRIES—1897,  
1898—Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE PROPOR- TION OF BUSINESS DONE		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Proportion	Percent- ages
Fine arts and taxidermy, . . . . .	3	71.67	70.00	—1.67	—2.33
Fireworks and matches, . . . . .	4	55.75	54.50	—1.25	—2.24
Flax, hemp, and jute goods, . . . . .	8	72.00	70.00	—2.00	—2.78
Food preparations, . . . . .	347	60.84	59.64	—1.20	—1.97
Furniture, . . . . .	135	58.24	59.07	+0.83	+1.43
Glass, . . . . .	13	56.92	55.00	—1.92	—3.37
Glue, isinglass, and starch, . . . . .	22	63.32	67.00	+3.68	+5.81
Hair work (animal and human), . . . . .	4	54.25	53.00	—1.25	—2.30
Hose: rubber, linen, etc., . . . . .	6	47.83	63.33	+15.50	+32.41
Hosiery and knit goods, . . . . .	38	58.50	60.29	+1.79	+3.06
Ink, mucilage, and paste, . . . . .	7	44.71	51.14	+6.43	+14.38
Ivory, bone, shell, and horn goods, etc., . . . . .	19	66.21	69.32	+3.11	+4.70
Jewelry, . . . . .	98	56.75	62.70	+5.95	+10.48
Leather, . . . . .	95	62.97	61.43	—1.54	—2.45
Leather goods, . . . . .	30	59.57	60.07	+0.50	+0.84
Liquors (bottled) and carbonated beverages, . . . . .	29	55.03	54.14	—0.89	—1.62
Liquors (malt), . . . . .	31	62.29	58.68	—3.61	—5.80
Liquors (distilled), . . . . .	6	34.50	28.83	—5.67	—16.43
Lumber, . . . . .	29	55.62	54.72	—0.90	—1.62
Machines and machinery, . . . . .	359	55.11	57.77	+2.66	+4.83
Metals and metallic goods, . . . . .	380	57.65	59.14	+1.49	+2.58
Models, lasts, and patterns, . . . . .	42	58.64	54.29	—0.65	—1.21
Musical instruments and materials, . . . . .	64	55.98	58.80	+2.82	+5.04
Oils and illuminating fluids, . . . . .	8	60.63	63.75	+3.12	+5.15
Paints, colors, and crude chemicals, . . . . .	29	56.03	58.24	+2.21	+3.94
Paper, . . . . .	80	75.70	81.23	+5.53	+7.31
Paper goods, . . . . .	34	70.56	67.71	—2.85	—4.04
Perfumes, toilet articles, etc., . . . . .	5	31.80	35.60	+3.80	+11.95
Photographs and photographic materials, . . . . .	24	52.33	57.08	+4.75	+9.08
Foishes and dressing, . . . . .	26	55.00	57.12	+2.12	+3.85
Printing, publishing, and bookbinding, . . . . .	62	69.19	70.48	+1.29	+1.86
Print works, dye works, and bleacheries, . . . . .	49	61.39	62.73	+1.34	+2.18
Railroad construction and equipment, . . . . .	16	69.00	61.31	—7.69	—11.14
Rubber and elastic goods, . . . . .	47	61.66	68.09	+6.43	+10.43
Saddlery and harness, . . . . .	35	55.83	55.71	—0.12	—0.21
Scientific instruments and appliances, . . . . .	20	62.55	61.20	—1.35	—2.16
Shipbuilding, . . . . .	46	42.76	47.70	+4.94	+11.55
Silk and silk goods, . . . . .	11	76.09	78.09	+2.00	+2.63
Sporting and athletic goods, . . . . .	5	46.00	49.00	+3.00	+6.52
Stone, . . . . .	196	53.39	52.01	—1.38	—2.53
Quarried, . . . . .	51	62.75	49.76	—12.99	—5.67
Cut and monumental, . . . . .	145	53.61	52.79	—0.82	—1.53
Straw and palm leaf goods, . . . . .	17	70.71	73.82	+3.11	+4.40
Tallow, candles, soap, and grease, . . . . .	66	57.58	53.53	—4.05	—6.85
Tobacco, snuff, and cigars, . . . . .	63	54.49	54.25	—0.24	—0.44
Toys and games (children's), . . . . .	10	61.60	66.30	+4.70	+7.63
Trunks and valises, . . . . .	7	51.14	47.86	—3.28	—6.41
Whips, lashes, and stocks, . . . . .	14	69.00	75.71	+6.71	+9.72
Wooden goods, . . . . .	73	55.93	58.26	+2.33	+4.17
Woollen goods, . . . . .	142	73.32	75.77	+2.45	+3.26
Woven goods and yarn, . . . . .	126	80.10	77.79	—2.31	—2.88
Shoddy, waste, etc., . . . . .	16	64.38	59.94	—4.44	—6.90
Worsted goods, . . . . .	35	82.63	76.74	—5.89	—7.13
ALL INDUSTRIES, . . . . .	4,701	60.80	61.19	+0.59	+0.97

## DAYS IN OPERATION: BY INDUSTRIES.

1897, 1898.

[The figures given in this presentation represent the average number of days each person was employed in the industries considered during the years 1897 and 1898. The average number of days in operation is based upon the average number of persons employed, the number of days per establishment being multiplied by the figures representing the average number of persons, and the sum divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained. Comparison is made between 1897 and 1898, and the relative increase or decrease in 1898 as compared with 1897 is given with its equivalent percentage.]

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUMBER OF DAYS IN OPERATION		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Days	Percent- ages
Agricultural implements, . . . . .	9	268.90	277.41	+8.51	+3.16
Arms and ammunition, . . . . .	14	267.10	290.94	+23.84	+8.93
Artisans' tools, . . . . .	73	285.44	289.66	+4.22	+1.48
Awnings, sails, tents, etc., . . . . .	42	288.09	289.38	+1.29	+0.45
Bicycles, tricycles, etc., . . . . .	18	299.57	294.12	-5.45	-1.82
Boots and shoes, . . . . .	644	285.88	286.80	+0.92	+0.32
Boots and shoes (factory product), . . . . .	430	285.59	286.68	+1.09	+0.38
Soles, heels, and cut stock, . . . . .	183	288.12	287.25	-0.87	-0.30
Boot and shoe findings, . . . . .	18	293.05	295.09	+2.04	+0.70
Stitching, heeling, etc., . . . . .	13	294.76	291.58	-3.18	-1.08
Boxes, barrels, kegs, etc., . . . . .	122	278.45	280.83	+2.38	+0.85
Boxes (paper), . . . . .	62	280.98	286.45	+5.47	+1.92
Brick, tiles, and sewer pipe, . . . . .	56	229.17	219.73	-9.44	-4.12
Brooms, brushes, and mops, . . . . .	23	268.87	292.50	+24.13	+8.99
Building materials, . . . . .	57	292.95	289.83	-3.12	-1.07
Burial cases, caskets, coffins, etc., . . . . .	6	301.00	302.32	+1.32	+0.44
Buttons and dress trimmings, . . . . .	13	282.46	278.52	-3.94	-1.39
Carpetings, . . . . .	12	243.78	223.08	-20.70	-8.49
Textile, . . . . .	8	242.53	219.81	-22.72	-9.37
Other, . . . . .	4	232.01	206.21	-14.20	-5.04
Carriages and wagons, . . . . .	136	235.54	233.69	-1.85	-0.65
Cement, kaolin, lime, and plaster, . . . . .	9	284.62	288.22	+16.30	+5.73
Chemical preparations (compounded), . . . . .	15	297.20	293.30	-3.99	-1.34
Clocks and watches, . . . . .	12	279.67	282.48	+2.81	+1.00
Clothing, . . . . .	152	287.69	290.02	+2.33	+0.81
Cooking, lighting, and heating apparatus, . . . . .	43	257.90	257.08	-0.82	-0.32
Cordage and twine, . . . . .	23	290.93	290.45	-0.48	-0.16
Cotton goods, . . . . .	169	286.50	293.08	+6.58	+2.30
Cotton goods (woven), . . . . .	120	287.37	291.89	+4.52	+1.57
Cotton yarn and thread, . . . . .	41	279.13	301.19	+22.06	+7.90
Cotton waste, . . . . .	8	296.23	303.75	+7.52	+2.54
Crayons, pencils, crucibles, etc., . . . . .	3	299.44	302.19	+2.75	+0.92
Drugs and medicines, . . . . .	25	297.10	296.40	-0.70	-0.24
Dyestuffs, . . . . .	6	270.52	270.25	-0.27	-0.10
Earthen, plaster, and stone ware, . . . . .	6	270.23	284.40	+14.17	+5.24
Electrical apparatus and appliances, . . . . .	21	299.62	299.73	+0.11	+0.04
Electroplating, . . . . .	11	304.41	274.85	-29.56	-9.71
Emery and sand paper and cloth, etc., . . . . .	10	295.53	298.29	+2.76	+0.93
Fancy articles, etc., . . . . .	19	290.70	295.03	+4.33	+1.49
Fertilizers, . . . . .	6	287.75	300.85	+13.10	+4.55

## DAYS IN OPERATION: BY INDUSTRIES — 1897, 1898

— Concluded.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUMBER OF DAYS IN OPERATION		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Days	Percent- ages
Fine arts and taxidermy, . . . . .	3	303.23	303.71	+0.48	+0.16
Fireworks and matches, . . . . .	4	270.16	274.64	+4.48	+1.66
Flax, hemp, and jute goods, . . . . .	8	280.97	277.64	—3.48	—1.22
Food preparations, . . . . .	347	299.56	297.97	—1.59	—0.53
Furniture, . . . . .	185	295.01	294.09	—0.92	—0.31
Glass, . . . . .	13	275.52	264.98	—10.54	—3.83
Glue, isinglass, and starch, . . . . .	22	251.39	250.12	—1.27	—0.51
Hair work (animal and human), . . . . .	4	225.64	267.46	+41.82	+18.53
Hose: rubber, linen, etc., . . . . .	6	303.93	299.91	—4.02	—1.32
Hosiery and knit goods, . . . . .	38	282.22	296.40	+14.18	+5.02
Ink, mucilage, and paste, . . . . .	7	303.66	300.85	—2.81	—0.93
Ivory, bone, shell, and horn goods, etc., . . . . .	19	287.12	294.41	+7.29	+2.54
Jewelry, . . . . .	93	276.53	281.60	+5.07	+1.83
Leather, . . . . .	95	291.83	290.44	—1.39	—0.48
Leather goods, . . . . .	30	290.42	301.65	+11.23	+3.87
Liquors (bottled) and carbonated beverages, . . . . .	29	303.23	303.18	—0.05	—0.02
Liquors (malt), . . . . .	31	305.85	305.70	—0.15	—0.05
Liquors (distilled), . . . . .	6	253.90	240.23	—13.67	—5.38
Lumber, . . . . .	29	268.09	242.90	—25.19	—9.40
Machines and machinery, . . . . .	359	275.71	283.71	+18.00	+4.72
Metals and metallic goods, . . . . .	380	278.17	280.79	+2.62	+0.94
Models, lasts, and patterns, . . . . .	42	285.39	289.19	+3.80	+1.33
Musical instruments and materials, . . . . .	64	272.65	281.76	+9.11	+3.34
Oils and illuminating fluids, . . . . .	8	304.13	302.45	—1.68	—0.55
Paints, colors, and crude chemicals, . . . . .	29	273.29	289.17	+15.88	+5.81
Paper, . . . . .	80	271.18	281.95	+10.77	+3.97
Paper goods, . . . . .	34	297.13	300.30	+3.17	+1.07
Perfumes, toilet articles, etc., . . . . .	5	298.74	276.78	—22.01	—7.37
Photographs and photographic materials, . . . . .	24	304.11	303.73	—0.38	—0.12
Polishes and dressing, . . . . .	26	300.71	301.77	+1.06	+0.35
Printing, publishing, and bookbinding, . . . . .	62	298.04	297.12	—0.92	—0.31
Print works, dye works, and bleacheries, . . . . .	49	295.77	291.62	—4.15	—1.40
Railroad construction and equipment, . . . . .	16	284.71	293.50	+8.79	+3.09
Rubber and elastic goods, . . . . .	47	253.01	269.13	+16.12	+6.37
Saddlery and harness, . . . . .	35	302.85	297.75	—5.10	—1.68
Scientific instruments and appliances, . . . . .	20	297.53	300.95	+3.42	+1.15
Shipbuilding, . . . . .	46	290.64	294.78	+4.14	+1.42
Silk and silk goods, . . . . .	11	279.04	282.29	+3.25	+1.16
Sporting and athletic goods, . . . . .	5	293.70	289.51	—4.19	—1.43
Stone, . . . . .	196	280.21	274.36	—5.85	—2.09
Quarried, . . . . .	51	275.28	265.19	—10.09	—3.67
Cut and monumental, . . . . .	145	285.83	286.08	+0.25	+0.09
Straw and palm leaf goods, . . . . .	17	278.59	279.92	+1.33	+0.48
Tallow, candles, soap, and grease, . . . . .	66	295.30	287.18	—8.12	—2.75
Tobacco, snuff, and cigars, . . . . .	63	291.83	289.88	—1.95	—0.67
Toys and games (children's), . . . . .	10	293.69	294.37	+0.68	+0.23
Trunks and valises, . . . . .	7	251.38	256.63	+5.25	+2.08
Whips, lashes, and stocks, . . . . .	14	294.87	298.91	+4.04	+1.37
Wooden goods, . . . . .	73	293.97	293.28	—0.74	—0.25
Woollen goods, . . . . .	142	285.45	279.58	—5.87	—2.06
Woven goods and yarn, . . . . .	126	285.45	280.02	—5.43	—1.90
Shoddy, waste, etc., . . . . .	16	285.14	251.34	—33.80	—11.85
Worsted goods, . . . . .	35	293.58	266.50	—27.08	—9.22
ALL INDUSTRIES, . . . . .	4,701	284.05	286.28	+2.23	+0.79





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# STATISTICS OF MANUFACTURES:

## INDUSTRY PRESENTATIONS.

•  
BOOTS AND SHOES.  
CARPETINGS.  
CARRIAGES AND WAGONS.  
CLOTHING.  
COTTON GOODS.  
FOOD PREPARATIONS.  
FURNITURE.  
HOSIERY AND KNIT GOODS.  
LEATHER.  
MACHINES AND MACHINERY.  
METALS AND METALLIC GOODS.  
MUSICAL INSTRUMENTS AND MATERIALS.  
PAPER.  
WOOLLEN GOODS.  
WORSTED GOODS.  
ALL INDUSTRIES.

1897, 1898.

## NOTES.

The following explanatory notes should be read in connection with the tables to which they refer:

## ESTABLISHMENTS, PARTNERS, ETC.

There are duplications in the lines devoted to "number of private firms," "partners," "number of corporations," and "stockholders." They are caused by the fact that the same firm or corporation is often engaged in manufacturing in two or more establishments located in the same town; sometimes in the same industry in different towns; and sometimes in more than one industry in the same town or in different towns. The plan adopted has been to consider each establishment as one (whether managed in connection with another or not), and to credit the whole number of firms, partners, corporations, and stockholders to each industry, but, in making up the total for "All Industries," to omit the duplications. Stockholders of certain establishments which are operated by railroad companies, or by syndicates or associations, many of which have extensive investments of capital outside this Commonwealth, are not included in this presentation; since to include all the stockholders of a railroad company, or of a syndicate or similar association, in connection with such merely branch establishments, incidental only to the main business of the corporation, would result in abnormally increasing the aggregate. The industries in which duplications appear may be ascertained by reference to the tables on pages 4 to 11.

## CAPITAL INVESTED.

In this presentation, the figures given against "Amount of capital invested" represent the returns made by the same establishments for each of the years given. Comparison is made, as regards the amount of capital invested between these two years. The relative increase or decrease in the later year as compared with the earlier year is given in amounts and percentages.

## STOCK USED.

In this presentation, the figures given against "Total value of stock used" represent the returns made by the same establishments for each of the years given. Comparison is made between the value of stock used in each of these two years. The relative increase or decrease in the later year as compared with the earlier year is given in amounts and percentages.

## GOODS MADE.

In this presentation, the figures given against "Total value of goods made and work done" represent the returns made by the same establishments for each of the years given. Comparison is made between the value of goods made and work done in each of these two years. The relative increase or decrease in the later year as compared with the earlier year is given in amounts and percentages.

## PERSONS EMPLOYED.

This presentation is divided into two sections. In the first is shown the aggregate average number of persons employed (males and females), the aggregate number of persons employed at periods of employment of the smallest number, the aggregate number of persons employed at periods of employment of the greatest number, and the excess of greatest over smallest number. By the terms "Periods of employment of smallest number" and "Periods of employment of greatest number" are meant those times, *as regards aggregate number of persons employed*, when the smallest or greatest number, respectively, was employed. The relative increase or decrease, expressed in amounts and percentages, is also given for one year as compared with the other. In the second section is shown the

aggregate number of persons employed, by sex, during each month of the two years specified. It should be borne in mind that the persons here enumerated are wage earners only; officers, clerks, or other salaried persons are not included.

#### WAGES AND EARNINGS.

In this presentation is shown the total amount paid in wages to all wage earners employed for each of the two years, the average yearly earnings per individual without regard to sex or age, and the relative increases or decreases in one year as compared with the other, expressed in amounts and percentages. The average yearly earnings have been obtained by dividing the total amount paid in wages by the figures representing the average number of persons employed. In this section is also shown the classified weekly earnings received by employes, ranging from under \$5 per week to \$20 per week and over, and the number of males and females receiving same. The returns were made by manufacturers to cover the week during which the largest number of persons was employed. It should be borne in mind that these figures represent the sums paid to wage earners only and do not include amounts paid to officers, clerks, or other salaried persons.

#### PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.

In this presentation is shown the average proportion of business done and the average number of days in operation. Greatest capacity, or maximum production, has been considered 100 per cent, and the percentages given indicate the average proportion of business done by each establishment during each year on the basis stated. The average number of days in operation is based upon the average number of persons employed, the number of days worked in each establishment being multiplied by the figures representing the average number of persons, and the sum divided by the aggregate number of persons, thus obtaining an average for each industry and for "All Industries." The relative increase or decrease in the later year as compared with the earlier year is given with its equivalent percentage.

**BOOTS AND SHOES. AGGREGATES.\* 1897, 1898.****ESTABLISHMENTS, PARTNERS, ETC.**

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DE- CREASE (-), OR NO CHANGE (=), IN 1898	
			Number	Percent- ages
Number of establishments reporting, . . .	644	644	=	=
Number of private firms, . . . . .	573	572	-1	-0.17
Number of partners, . . . . .	982	956	-26	-2.65
Males, . . . . .	956	928	-28	-2.93
Females, . . . . .	9	13	+4	+44.44
Special, . . . . .	14	9	-5	-35.71
Estates, . . . . .	3	6	+3	+100.00
Number of corporations, . . . . .	71	72	+1	+1.41
Number of stockholders, . . . . .	818	888	+20	+2.44
Males, . . . . .	629	650	+21	+3.34
Females, . . . . .	158	158	=	=
Banks, trustees, etc., . . . . .	31	30	-1	-3.23
Aggregates: partners and stockholders, .	1,800	1,794	-6	-0.33

**CAPITAL INVESTED.**

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . . .	\$23,200,058	\$22,414,665	-\$785,393	-3.39

**STOCK USED. AGGREGATE VALUES.**

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . . .	\$65,182,608	\$67,386,674	+\$2,204,066	+3.38

**GOODS MADE. AGGREGATE VALUES.**

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$104,042,441	\$107,188,460	+\$3,146,019	+3.02

\* Includes Boots and Shoes: Factory Product; Soles, Heels, and Cut Stock; Findings; and Stitching, Heeling, etc., details of which are given in the preceding presentations.

## BOOTS AND SHOES. AGGREGATES — 1897, 1898 — Continued.

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	50,055	51,897	+1,842	+3.68
Males, . . . . .	34,709	35,650	+941	+2.71
Females, . . . . .	15,346	16,247	+901	+5.87
Smallest number, . . . . .	40,058	41,166	+1,108	+2.77
Greatest number, . . . . .	59,756	62,242	+2,486	+4.16
Excess of greatest over smallest number, .	19,698	21,076	+1,378	+7.00

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	33,762	15,004	48,766	35,571	16,166	51,737
February, . . . . .	34,762	15,397	50,159	36,663	16,335	53,008
March, . . . . .	35,605	15,507	51,112	37,500	17,383	54,883
April, . . . . .	35,099	15,400	50,499	37,174	17,135	54,309
May, . . . . .	34,970	15,425	50,395	35,688	16,234	51,922
June, . . . . .	33,576	14,555	48,131	34,286	15,435	49,721
July, . . . . .	33,254	14,393	47,647	34,536	15,579	50,115
August, . . . . .	35,363	15,591	50,954	35,785	16,339	52,124
September, . . . . .	35,260	16,016	51,276	35,505	16,367	51,872
October, . . . . .	35,449	15,711	51,160	35,410	15,925	51,335
November, . . . . .	34,484	15,321	49,805	34,307	15,436	49,743
December, . . . . .	34,596	15,621	50,217	34,892	15,776	50,668

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$23,560,417	\$23,904,714	+\$344,297	+1.46
Average yearly earnings, . . . . .	470.69	460.62	—10.07	—2.14

## BOOTS AND SHOES AGGREGATES—1897, 1898—Concluded.

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	2,794	3,738	6,532	3,161	4,288	7,449
\$5 but under \$6, . . . .	1,743	2,138	3,881	2,033	2,250	4,283
\$6 but under \$7, . . . .	2,343	2,372	4,715	2,385	2,502	4,887
\$7 but under \$8, . . . .	2,493	2,311	4,804	2,794	2,403	5,197
\$8 but under \$9, . . . .	2,702	1,977	4,679	3,066	2,045	5,111
\$9 but under \$10, . . . .	3,758	1,929	5,687	4,049	2,020	6,069
\$10 but under \$12, . . . .	6,464	2,102	8,566	6,768	2,191	8,959
\$12 but under \$15, . . . .	9,152	1,594	10,746	8,574	1,639	10,213
\$15 but under \$20, . . . .	6,609	463	7,072	6,613	421	7,034
\$20 and over, . . . . .	2,264	45	2,309	2,289	44	2,333
TOTALS, . . . . .	40,322	18,669	58,991	41,732	19,803	61,535

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percentages
Average proportion of business done, . . .	61.85	59.88	—1.47	—2.40
Average number of days in operation, . . .	285.88	286.80	+0.92	+0.32

## CARPETINGS. AGGREGATES.\* 1897, 1898.

## ESTABLISHMENTS, PARTNERS, ETC.

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DECREASE (—), OR NO CHANGE (=), IN 1898	
			Number	Percentages
Number of establishments reporting, . . .	12	12	=	=
Number of private firms, . . . . .	4	4	=	=
Number of partners, . . . . .	6	6	=	=
Males, . . . . .	6	6	=	=
Number of corporations, . . . . .	8	8	=	=
Number of stockholders, . . . . .	976	978	+2	+0.20
Males, . . . . .	419	421	+2	+0.48
Females, . . . . .	377	379	+2	+0.53
Banks, trustees, etc., . . . . .	180	178	—2	—1.11
Aggregates: partners and stockholders, . .	982	984	+2	+0.20

\* Includes Carpetings (Textile) and Carpetings (Other), details of which are given in the preceding presentations.

## CARPETINGS. AGGREGATES — 1897, 1898 — Continued.

## CAPITAL INVESTED.

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . .	\$6,784,921	\$6,582,652	—\$202,269	—2.98

## STOCK USED. AGGREGATE VALUES.

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . .	\$3,898,404	\$3,638,475	—\$259,929	—6.67

## GOODS MADE. AGGREGATE VALUES.

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$6,364,709	\$6,016,943	—\$347,766	—5.46

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	4,623	4,203	—420	—9.09
Males, . . . . .	2,259	2,127	—132	—5.84
Females, . . . . .	2,364	2,076	—288	—12.18
Smallest number, . . . . .	4,207	3,344	—863	—20.51
Greatest number, . . . . .	4,943	4,879	—64	—1.29
Excess of greatest over smallest number, .	736	1,535	+799	+108.56

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	2,222	2,297	4,519	2,248	2,148	4,396
February, . . . . .	2,249	2,438	4,687	2,276	2,244	4,520
March, . . . . .	2,214	2,383	4,597	2,189	2,235	4,424
April, . . . . .	2,264	2,392	4,656	1,978	1,753	3,731
May, . . . . .	2,291	2,436	4,727	1,908	1,625	3,533



## CARPETINGS. AGGREGATES — 1897, 1898 — Concluded.

## PERSONS EMPLOYED: BY MONTHS — Concluded.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
June, . . . . .	2,273	2,405	4,678	2,031	1,833	3,864
July, . . . . .	2,271	2,377	4,648	2,128	2,114	4,242
August, . . . . .	2,280	2,361	4,641	2,080	2,040	4,120
September, . . . . .	2,232	2,430	4,662	2,001	2,042	4,043
October, . . . . .	2,247	2,351	4,598	2,090	2,073	4,163
November, . . . . .	2,257	2,251	4,508	2,268	2,348	4,616
December, . . . . .	2,315	2,257	4,572	2,308	2,448	4,756

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percentages
Total amount paid in wages, . . . . .	\$1,605,379	\$1,431,921	—\$173,458	—10.80
Average yearly earnings, . . . . .	347.26	340.69	—6.57	—1.89

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	377	640	1,017	436	782	1,218
\$5 but under \$6, . . . . .	152	587	739	168	450	618
\$6 but under \$7, . . . . .	237	417	654	206	312	518
\$7 but under \$8, . . . . .	215	337	552	236	409	645
\$8 but under \$9, . . . . .	232	184	416	222	205	427
\$9 but under \$10, . . . . .	262	184	446	277	126	403
\$10 but under \$12, . . . . .	305	179	484	311	189	500
\$12 but under \$15, . . . . .	322	25	347	271	33	304
\$15 but under \$20, . . . . .	208	—	208	168	—	168
\$20 and over, . . . . .	71	—	71	74	—	74
TOTALS, . . . . .	2,381	2,553	4,934	2,369	2,506	4,875

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percentages
Average proportion of business done, . . . . .	67.33	66.83	—0.50	—0.74
Average number of days in operation, . . . . .	243.78	223.08	—20.70	—8.49

**CARRIAGES AND WAGONS. 1897, 1898.****ESTABLISHMENTS, PARTNERS, ETC.**

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DE- CREASE (-), OR NO CHANGE (=), IN 1898	
			Number	Percent- ages
Number of establishments reporting, . .	186	186	=	=
Number of private firms, . . . . .	127	126	-1	-0.79
Number of partners, . . . . .	190	187	-3	-1.58
Males, . . . . .	184	181	-3	-1.63
Special, . . . . .	1	1	=	=
Estates, . . . . .	5	5	=	=
Number of corporations, . . . . .	9	10	+1	+11.11
Number of stockholders, . . . . .	66	71	+5	+7.58
Males, . . . . .	47	48	+1	+2.13
Females, . . . . .	14	17	+3	+21.43
Banks, trustees, etc., . . . . .	5	6	+1	+20.00
Aggregates: partners and stockholders, .	256	258	+2	+0.78

**CAPITAL INVESTED.**

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . . .	\$2,193,192	\$2,130,968	-\$62,224	-2.84

**STOCK USED. AGGREGATE VALUES.**

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . . .	\$1,444,902	\$1,469,680	+\$24,778	+1.71

**GOODS MADE. AGGREGATE VALUES.**

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$3,479,985	\$3,501,135	+\$21,150	+0.61

## CARRIAGES AND WAGONS—1897, 1898—Continued.

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	1,929	1,897	—32	—1.66
Males, . . . . .	1,917	1,885	—32	—1.67
Females, . . . . .	12	12	*=	*=
Smallest number, . . . . .	1,479	1,463	—16	—1.08
Greatest number, . . . . .	2,435	2,378	—57	—2.34
Excess of greatest over smallest number, .	956	915	—41	—4.29

\* No change.

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	1,882	14	1,896	1,785	11	1,796
February, . . . . .	1,978	14	1,992	1,865	12	1,877
March, . . . . .	2,118	14	2,132	2,071	13	2,084
April, . . . . .	2,260	11	2,271	2,196	13	2,209
May, . . . . .	2,278	12	2,290	2,196	12	2,208
June, . . . . .	2,191	11	2,202	2,117	12	2,129
July, . . . . .	1,832	9	1,841	1,890	10	1,900
August, . . . . .	1,692	9	1,701	1,711	9	1,720
September, . . . . .	1,667	11	1,678	1,646	10	1,656
October, . . . . .	1,670	10	1,680	1,653	12	1,665
November, . . . . .	1,669	10	1,679	1,655	16	1,671
December, . . . . .	1,745	11	1,756	1,686	18	1,704

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$1,117,334	\$1,135,202	+\$17,868	+1.60
Average yearly earnings, . . . . .	579.23	598.42	+19.19	+3.31

## CARRIAGES AND WAGONS — 1897, 1898 — Concluded.

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	29	1	30	39	7	46
\$5 but under \$6, . . . .	25	2	27	35	3	38
\$6 but under \$7, . . . .	63	3	66	67	6	73
\$7 but under \$8, . . . .	90	6	96	60	—	60
\$8 but under \$9, . . . .	100	2	102	83	1	84
\$9 but under \$10, . . . .	239	2	241	230	2	232
\$10 but under \$12, . . . .	434	1	435	458	1	459
\$12 but under \$15, . . . .	730	—	730	732	—	732
\$15 but under \$20, . . . .	605	—	605	575	—	575
\$20 and over, . . . . .	55	—	55	69	—	69
TOTALS, . . . . .	2,370	17	2,387	2,348	20	2,368

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percent-ages
Average proportion of business done, . . .	56.41	54.46	—1.95	—3.46
Average number of days in operation, . . .	285.54	283.69	—1.85	—0.65

## CLOTHING. 1897, 1898.

## ESTABLISHMENTS, PARTNERS, ETC.

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DECREASE (—), OR NO CHANGE (—), IN 1898	
			Number	Percent-ages
Number of establishments reporting, . . .	152	152	=	=
Number of private firms, . . . . .	127	124	—3	—2.36
Number of partners, . . . . .	228	226	—2	—0.88
Males, . . . . .	219	220	+1	+0.46
Females, . . . . .	6	3	—3	—50.00
Special, . . . . .	2	2	=	=
Estates, . . . . .	1	1	=	=
Number of corporations, . . . . .	25	28	+3	+12.00
Number of stockholders, . . . . .	433	523	+90	+20.79
Males, . . . . .	290	342	+52	+17.93
Females, . . . . .	120	155	+35	+29.17
Banks, trustees, etc., . . . . .	23	26	+3	+13.04
Aggregates: partners and stockholders, . .	661	749	+88	+13.31

## CLOTHING — 1897, 1898 — Continued.

## CAPITAL INVESTED.

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . .	\$5,176,587	\$5,067,311	—\$109,276	—2.11

## STOCK USED. AGGREGATE VALUES.

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . .	\$11,011,856	\$10,668,898	—\$342,958	—3.11

## GOODS MADE. AGGREGATE VALUES.

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$19,958,467	\$19,848,573	—\$109,894	—0.55

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	9,184	9,357	+173	+1.88
Males, . . . . .	2,770	2,784	+14	+0.51
Females, . . . . .	6,414	6,573	+159	+2.48
Smallest number, . . . . .	6,867	7,891	+524	+7.63
Greatest number, . . . . .	10,992	11,042	+50	+0.45
Excess of greatest over smallest number, .	4,125	3,651	—474	—11.49

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	2,558	6,007	8,565	2,702	6,291	8,993
February, . . . . .	2,595	6,387	8,982	2,759	6,643	9,402
March, . . . . .	2,668	6,738	9,406	2,774	6,919	9,693
April, . . . . .	2,695	6,818	9,513	2,802	6,865	9,667
May, . . . . .	2,709	6,751	9,460	2,717	6,587	9,304

## CLOTHING — 1897, 1898 — Concluded.

## PERSONS EMPLOYED: BY MONTHS — Concluded.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
June, . . . . .	2,770	6,437	9,207	2,659	6,280	8,939
July, . . . . .	2,807	5,892	8,499	2,730	5,998	8,728
August, . . . . .	2,827	5,581	8,408	2,761	5,881	8,642
September, . . . . .	2,906	6,610	9,516	2,869	6,504	9,373
October, . . . . .	2,960	6,911	9,871	2,966	7,044	10,010
November, . . . . .	2,909	6,697	9,606	2,845	6,989	9,834
December, . . . . .	2,817	6,280	9,097	2,769	6,771	9,540

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$3,412,548	\$3,621,032	+\$108,484	+3.18
Average yearly earnings, . . . . .	371.58	376.30	+4.72	+1.27

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	276	1,686	1,962	230	1,680	1,910
\$5 but under \$6, . . . . .	162	1,182	1,344	160	1,170	1,330
\$6 but under \$7, . . . . .	212	1,339	1,551	236	1,407	1,643
\$7 but under \$8, . . . . .	229	1,210	1,439	256	1,150	1,406
\$8 but under \$9, . . . . .	221	992	1,213	250	998	1,248
\$9 but under \$10, . . . . .	277	710	987	277	662	939
\$10 but under \$12, . . . . .	329	556	885	355	497	852
\$12 but under \$15, . . . . .	539	153	692	532	183	715
\$15 but under \$20, . . . . .	521	39	560	503	62	565
\$20 and over, . . . . .	398	14	412	342	16	358
TOTALS, . . . . .	3,164	7,881	11,045	3,141	7,825	10,966

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percent- ages
Average proportion of business done, . . . . .	65.24	65.75	+0.51	+0.78
Average number of days in operation, . . . . .	287.69	290.02	+2.33	+0.81

**COTTON GOODS. AGGREGATES.\* 1897, 1898.****ESTABLISHMENTS, PARTNERS, ETC.**

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DE- CREASE (-), OR NO CHANGE (=), IN 1898	
			Number	Percent- ages
Number of establishments reporting, . . .	169	169	=	=
Number of private firms, . . . . .	34	34	=	=
Number of partners, . . . . .	62	61	-1	-1.61
Males, . . . . .	52	52	=	=
Females, . . . . .	7	6	-1	-14.29
Estates, . . . . .	3	3	=	=
Number of corporations, . . . . .	136	135	=	=
Number of stockholders, . . . . .	22,137	22,134	-3	-0.01
Males, . . . . .	10,413	10,176	-237	-2.28
Females, . . . . .	8,602	8,669	+67	+0.78
Banks, trustees, etc., . . . . .	3,122	3,289	+167	+5.35
Aggregates: partners and stockholders, .	22,199	22,195	-4	-0.02

**CAPITAL INVESTED.**

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . . .	\$113,437,432	\$112,702,330	-\$735,102	-0.65

**STOCK USED. AGGREGATE VALUES.**

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . . .	\$50,857,806	\$47,294,087	-\$3,563,719	-7.01

**GOODS MADE. AGGREGATE VALUES.**

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$88,272,454	\$88,374,733	+\$102,279	+0.12

\* Includes Cotton Goods: Woven, Yarn and Thread, and Waste, details of which are given in the preceding presentations.

## COTTON GOODS. AGGREGATES — 1897, 1898 — Continued.

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	81,195	81,385	+190	+0.23
Males, . . . . .	41,094	41,332	+238	+0.58
Females, . . . . .	40,101	40,053	—48	—0.12
Smallest number, . . . . .	71,385	69,968	—1,417	—1.99
Greatest number, . . . . .	87,283	88,134	+851	+0.97
Excess of greatest over smallest number, .	15,898	18,166	+2,268	+14.27

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	42,473	41,446	83,919	40,459	40,286	80,745
February, . . . . .	41,239	40,055	81,294	38,253	37,703	75,956
March, . . . . .	41,576	40,355	81,931	38,734	38,225	76,959
April, . . . . .	41,511	40,454	81,965	40,149	39,812	79,961
May, . . . . .	41,460	40,882	82,342	41,184	39,893	81,077
June, . . . . .	40,849	40,235	81,084	42,102	40,799	82,901
July, . . . . .	39,837	38,237	78,074	42,103	39,856	81,959
August, . . . . .	37,830	35,649	73,479	42,197	39,714	81,911
September, . . . . .	41,945	40,621	81,966	42,265	39,804	82,069
October, . . . . .	41,664	41,141	82,805	43,062	41,276	84,338
November, . . . . .	41,890	41,221	83,111	42,688	41,339	84,027
December, . . . . .	41,370	40,862	82,232	42,762	41,835	84,597

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$27,193,335	\$26,204,240	—\$989,095	—3.81
Average yearly earnings, . . . . .	334.91	323.08	—11.83	—3.53



## COTTON GOODS. AGGREGATES—1897, 1898—Concluded.

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	8,099	12,455	20,554	9,256	14,193	23,449
\$5 but under \$6, . . . .	5,306	8,976	14,282	6,141	9,457	15,598
\$6 but under \$7, . . . .	7,285	8,563	15,848	7,044	8,265	15,909
\$7 but under \$8, . . . .	5,581	6,419	12,000	6,178	6,369	12,547
\$8 but under \$9, . . . .	5,246	4,618	9,864	5,034	3,463	8,497
\$9 but under \$10, . . . .	3,811	1,479	5,290	3,470	902	4,372
\$10 but under \$12, . . . .	4,329	516	4,845	3,857	367	4,224
\$12 but under \$15, . . . .	2,642	44	2,686	2,182	32	2,214
\$15 but under \$20, . . . .	1,029	3	1,032	889	4	893
\$20 and over, . . . . .	627	—	627	611	—	611
TOTALS, . . . . .	43,955	43,073	87,028	45,262	43,052	88,314

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percentages
Average proportion of business done, . . .	81.83	84.42	+2.59	+3.17
Average number of days in operation, . . .	286.50	293.08	+6.58	+2.30

## FOOD PREPARATIONS. 1897, 1898.

## ESTABLISHMENTS, PARTNERS, ETC.

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DECREASE (—), OR NO CHANGE (=), IN 1898	
			Number	Percentages
Number of establishments reporting, . . .	347	347	=	=
Number of private firms, . . . . .	301	296	—5	—1.66
Number of partners, . . . . .	415	403	—12	—2.89
Males, . . . . .	401	394	—17	—4.24
Females, . . . . .	7	10	+3	+42.86
Special, . . . . .	1	1	=	=
Estates, . . . . .	6	8	+2	+33.33
Number of corporations, . . . . .	46	51	+5	+10.87
Number of stockholders, . . . . .	632	807	+175	+27.69
Males, . . . . .	511	622	+111	+21.72
Females, . . . . .	100	146	+46	+46.00
Banks, trustees, etc., . . . . .	21	39	+18	+85.71
Aggregates: partners and stockholders, . .	1,047	1,210	+163	+15.57

## FOOD PREPARATIONS — 1897, 1898 — Continued.

## CAPITAL INVESTED.

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . .	\$18,286,150	\$19,040,852	+\$754,702	+4.13

## STOCK USED. AGGREGATE VALUES.

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . .	\$52,161,160	\$53,175,766	+\$1,014,606	+1.95

## GOODS MADE. AGGREGATE VALUES.

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$63,633,566	\$68,369,832	+\$4,736,266	+7.44

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	8,938	9,176	+238	+2.66
Males, . . . . .	6,584	6,659	+75	+1.19
Females, . . . . .	2,404	2,517	+113	+4.70
Smallest number, . . . . .	7,676	7,911	+235	+3.06
Greatest number, . . . . .	10,728	11,295	+567	+5.29
Excess of greatest over smallest number, .	3,052	3,384	+332	+10.88

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	6,434	2,222	8,656	6,698	2,343	9,041
February, . . . . .	6,681	2,270	8,951	6,941	2,348	9,289
March, . . . . .	6,435	2,269	8,704	6,677	2,354	9,031
April, . . . . .	6,230	2,226	8,456	6,376	2,289	8,665
May, . . . . .	6,297	2,290	8,587	6,324	2,296	8,620

## FOOD PREPARATIONS — 1897, 1898 — Concluded.

## PERSONS EMPLOYED: BY MONTHS — Concluded.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
June, . . . . .	6,375	2,387	8,762	6,354	2,360	8,714
July, . . . . .	6,395	2,292	8,687	6,453	2,376	8,829
August, . . . . .	6,398	2,247	8,645	6,414	2,303	8,717
September, . . . . .	6,617	2,591	9,208	6,636	2,692	9,328
October, . . . . .	6,783	2,708	9,491	6,855	2,912	9,767
November, . . . . .	6,761	2,716	9,477	6,978	2,960	9,938
December, . . . . .	6,770	2,696	9,466	7,034	2,881	9,915

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percentages
Total amount paid in wages, . . . . .	\$4,031,021	\$4,073,683	+\$42,662	+1.06
Average yearly earnings, . . . . .	451.00	443.95	—7.05	—1.56

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	340	1,731	2,071	350	1,881	2,231
\$5 but under \$6, . . . . .	318	535	853	297	662	959
\$6 but under \$7, . . . . .	355	485	840	429	517	946
\$7 but under \$8, . . . . .	513	168	671	409	127	536
\$8 but under \$9, . . . . .	784	96	880	740	87	827
\$9 but under \$10, . . . . .	1,356	37	1,393	1,572	30	1,602
\$10 but under \$12, . . . . .	1,382	37	1,419	1,381	42	1,423
\$12 but under \$15, . . . . .	1,635	12	1,647	1,672	16	1,688
\$15 but under \$20, . . . . .	799	5	804	813	11	824
\$20 and over, . . . . .	198	—	198	204	—	204
TOTALS, . . . . .	7,590	3,096	10,676	7,867	3,373	11,240

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percentages
Average proportion of business done, . . . . .	60.84	50.64	—1.20	—1.97
Average number of days in operation, . . . . .	299.56	297.97	—1.59	—0.53

**FURNITURE. 1897, 1898.**  
**ESTABLISHMENTS, PARTNERS, ETC.**

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DE- CREASE (-), OR NO CHANGE (=), IN 1898	
			Number	Percent- ages
Number of establishments reporting, . . .	135	135	=	=
Number of private firms, . . . . .	115	112	-3	-2.61
Number of partners, . . . . .	198	180	-18	-6.74
Males, . . . . .	182	170	-12	-6.59
Females, . . . . .	8	6	-2	-25.00
Special, . . . . .	1	1	=	=
Estates, . . . . .	2	3	+1	+50.00
Number of corporations, . . . . .	20	23	+3	+15.00
Number of stockholders, . . . . .	1,099	765	-334	-30.39
Males, . . . . .	842	555	-287	-34.09
Females, . . . . .	207	160	-47	-22.71
Banks, trustees, etc., . . . . .	50	50	=	=
Aggregates: partners and stockholders, .	1,292	945	-347	-26.86

**CAPITAL INVESTED.**

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . . .	\$7,428,451	\$7,442,516	+\$14,365	+0.19

**STOCK USED. AGGREGATE VALUES.**

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . . .	\$6,070,789	\$5,993,613	-\$77,176	-1.27

**GOODS MADE. AGGREGATE VALUES.**

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$11,263,227	\$11,285,238	+\$22,011	+0.20

## FURNITURE — 1897, 1898 — Continued.

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	5,297	5,326	+29	+0.55
Males, . . . . .	4,605	4,726	+81	+0.66
Females, . . . . .	602	600	—2	—0.33
Smallest number, . . . . .	4,429	4,465	+36	+0.81
Greatest number, . . . . .	6,196	6,166	—30	—0.48
Excess of greatest over smallest number, .	1,767	1,701	—66	—3.74

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	4,459	522	4,981	4,604	575	5,179
February, . . . . .	4,592	583	5,175	4,689	609	5,298
March, . . . . .	4,720	612	5,332	4,807	620	5,427
April, . . . . .	4,726	622	5,348	4,774	612	5,386
May, . . . . .	4,707	654	5,361	4,694	611	5,305
June, . . . . .	4,692	656	5,348	4,594	623	5,217
July, . . . . .	4,427	538	4,965	4,397	574	4,971
August, . . . . .	4,458	587	5,045	4,663	545	5,208
September, . . . . .	4,682	591	5,273	4,695	581	5,276
October, . . . . .	4,935	653	5,588	4,938	603	5,541
November, . . . . .	4,992	630	5,622	4,975	619	5,594
December, . . . . .	4,873	593	5,466	4,852	601	5,453

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$2,501,323	\$2,555,608	+\$54,285	+2.17
Average yearly earnings, . . . . .	472.22	479.84	+7.62	+1.61

## FURNITURE—1897, 1898—Concluded.

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	201	93	294	194	113	307
\$5 but under \$6, . . . . .	157	62	219	180	81	261
\$6 but under \$7, . . . . .	257	199	456	270	147	417
\$7 but under \$8, . . . . .	508	220	723	467	186	653
\$8 but under \$9, . . . . .	426	76	502	541	92	633
\$9 but under \$10, . . . . .	543	47	590	604	47	651
\$10 but under \$12, . . . . .	884	26	910	896	26	922
\$12 but under \$15, . . . . .	1,696	7	1,703	1,533	9	1,542
\$15 but under \$20, . . . . .	701	—	701	673	2	675
\$20 and over, . . . . .	110	—	110	106	—	106
TOTALS, . . . . .	5,478	730	6,208	5,464	703	6,167

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percentages
Average proportion of business done, . . . . .	58.24	59.07	+0.83	+1.43
Average number of days in operation, . . . . .	295.01	294.09	—0.92	—0.31

## HOSIERY AND KNIT GOODS. 1897, 1898.

## ESTABLISHMENTS, PARTNERS, ETC.

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DECREASE (—), OR NO CHANGE (=), IN 1898	
			Number	Percentages
Number of establishments reporting, . . . . .	38	38	=	=
Number of private firms, . . . . .	23	19	—4	—17.39
Number of partners, . . . . .	38	28	—10	—26.32
Males, . . . . .	36	26	—10	—27.78
Females, . . . . .	2	1	—1	—50.00
Special, . . . . .	—	1	+1	—
Number of corporations, . . . . .	15	19	+4	+26.67
Number of stockholders, . . . . .	1,100	1,110	+10	+0.91
Males, . . . . .	511	501	—10	—1.96
Females, . . . . .	349	354	+5	+1.43
Banks, trustees, etc., . . . . .	240	255	+15	+6.25
Aggregates: partners and stockholders, . . . . .	1,138	1,138	=	=

## HOSIERY AND KNIT GOODS — 1897, 1898 — Continued.

## CAPITAL INVESTED.

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . . .	\$3,097,844	\$3,984,562	+ \$286,718	+7.75

## STOCK USED. AGGREGATE VALUES.

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . . .	\$1,955,039	\$2,121,807	+ \$166,768	+8.53

## GOODS MADE. AGGREGATE VALUES.

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$4,322,619	\$4,933,724	+ \$611,105	+14.14

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	5,177	5,826	+649	+12.54
Males, . . . . .	1,514	1,666	+152	+10.04
Females, . . . . .	3,663	4,160	+497	+13.57
Smallest number, . . . . .	4,656	5,129	+473	+10.16
Greatest number, . . . . .	6,120	6,413	+293	+4.79
Excess of greatest over smallest number, .	1,464	1,284	—180	—12.30

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	1,565	3,781	5,346	1,647	4,024	5,671
February, . . . . .	1,522	3,721	5,243	1,631	4,113	5,744
March, . . . . .	1,585	3,792	5,377	1,648	4,193	5,841
April, . . . . .	1,602	3,831	5,433	1,682	4,222	5,904
May, . . . . .	1,587	3,778	5,365	1,634	4,104	5,738

## HOSIERY AND KNIT GOODS — 1897, 1898 — Concluded.

## PERSONS EMPLOYED: BY MONTHS — Concluded.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
June, . . . . .	1,548	3,696	5,244	1,603	4,039	5,642
July, . . . . .	1,513	3,569	5,082	1,612	4,009	5,621
August, . . . . .	681	1,981	2,662	1,633	4,012	5,645
September, . . . . .	1,524	3,722	5,246	1,655	4,117	5,772
October, . . . . .	1,671	3,975	5,646	1,701	4,254	5,955
November, . . . . .	1,678	4,111	5,789	1,744	4,427	6,171
December, . . . . .	1,651	3,979	5,630	1,728	4,365	6,093

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$1,559,239	\$1,758,321	+\$199,082	+12.77
Average yearly earnings, . . . . .	801.19	801.81	+0.62	+0.21

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	345	1,903	2,248	407	1,833	2,240
\$5 but under \$6, . . . . .	139	879	1,018	139	926	1,065
\$6 but under \$7, . . . . .	328	741	1,069	352	925	1,277
\$7 but under \$8, . . . . .	195	457	652	178	487	665
\$8 but under \$9, . . . . .	154	239	393	171	195	366
\$9 but under \$10, . . . . .	139	107	246	168	116	284
\$10 but under \$12, . . . . .	190	56	246	197	71	268
\$12 but under \$15, . . . . .	116	12	128	103	35	138
\$15 but under \$20, . . . . .	73	—	73	64	4	68
\$20 and over, . . . . .	41	—	41	52	—	52
TOTALS, . . . . .	1,720	4,394	6,114	1,831	4,592	6,423

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percent- ages
Average proportion of business done, . . . . .	58.50	60.29	+1.79	+3.06
Average number of days in operation, . . . . .	282.22	296.40	+14.18	+5.02



**LEATHER. 1897, 1898.**  
**ESTABLISHMENTS, PARTNERS, ETC.**

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DE- CREASE (-), OR NO CHANGE (=), IN 1898	
			Number	Percent- ages
Number of establishments reporting, . . .	95	95	=	=
Number of private firms, . . . . .	84	83	-1	-1.19
Number of partners, . . . . .	147	147	=	=
Males, . . . . .	143	144	+1	+0.70
Females, . . . . .	1	-	-1	-100.00
Special, . . . . .	3	3	=	=
Number of corporations, . . . . .	11	12	+1	+9.09
Number of stockholders, . . . . .	49	55	+6	+12.24
Males, . . . . .	46	51	+5	+10.87
Females, . . . . .	3	4	+1	+33.33
Aggregates: partners and stockholders, .	196	202	+6	+3.06

**CAPITAL INVESTED.**

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . . .	\$6,231,541	\$6,533,029	+\$301,488	+4.84

**STOCK USED. AGGREGATE VALUES.**

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . . .	\$14,532,557	\$14,929,168	+\$396,611	+2.73

**GOODS MADE. AGGREGATE VALUES.**

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$19,317,480	\$19,647,769	+\$330,289	+1.71

## LEATHER — 1897, 1898 — Continued.

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	5,597	5,465	—132	—2.36
Males, . . . . .	5,568	5,440	—128	—2.30
Females, . . . . .	29	25	—4	—13.79
Smallest number, . . . . .	4,514	4,361	—153	—3.39
Greatest number, . . . . .	6,685	6,507	—178	—2.66
Excess of greatest over smallest number, .	2,171	2,146	—25	—1.15

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	5,360	34	5,394	5,682	27	5,709
February, . . . . .	5,465	38	5,503	5,640	28	5,668
March, . . . . .	5,470	35	5,505	5,919	30	5,949
April, . . . . .	5,453	26	5,479	5,833	26	5,859
May, . . . . .	5,485	25	5,510	5,584	20	5,604
June, . . . . .	5,441	21	5,462	5,390	21	5,411
July, . . . . .	5,458	18	5,476	5,257	20	5,277
August, . . . . .	5,669	28	5,697	5,206	24	5,230
September, . . . . .	5,679	30	5,709	5,269	24	5,293
October, . . . . .	5,814	32	5,846	5,080	21	5,101
November, . . . . .	5,841	31	5,872	5,138	28	5,166
December, . . . . .	5,669	27	5,696	5,221	36	5,257

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$2,679,496	\$2,640,868	—\$38,628	—1.44
Average yearly earnings, . . . . .	478.74	483.23	+4.49	+0.94

## LEATHER—1897, 1898—Concluded.

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	145	7	152	100	3	103
\$5 but under \$6, . . . .	161	5	166	177	4	181
\$6 but under \$7, . . . .	386	22	408	393	19	412
\$7 but under \$8, . . . .	604	3	607	632	5	637
\$8 but under \$9, . . . .	768	-	768	830	-	830
\$9 but under \$10, . . . .	1,631	-	1,631	1,676	-	1,676
\$10 but under \$12, . . . .	1,497	1	1,498	1,435	-	1,435
\$12 but under \$15, . . . .	924	-	924	806	1	807
\$15 but under \$20, . . . .	420	-	420	359	-	359
\$20 and over, . . . . .	91	-	91	88	-	88
TOTALS, . . . . .	6,627	38	6,665	6,496	32	6,528

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Proportion and Days	Percentages
Average proportion of business done, . . .	62.97	61.43	-1.54	-2.45
Average number of days in operation, . . .	291.83	290.44	-1.39	-0.48

## MACHINES AND MACHINERY. 1897, 1898.

## ESTABLISHMENTS, PARTNERS, ETC.

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DECREASE (-), OR NO CHANGE (=), IN 1898	
			Number	Percentages
Number of establishments reporting, . . .	359	359	=	=
Number of private firms, . . . . .	238	236	-2	-0.84
Number of partners, . . . . .	375	368	-7	-1.87
Males, . . . . .	357	349	-8	-2.24
Females, . . . . .	9	10	+1	+11.11
Estates, . . . . .	9	9	=	=
Number of corporations, . . . . .	121	123	+2	+1.65
Number of stockholders, . . . . .	4,067	4,163	+96	+2.36
Males, . . . . .	2,531	2,535	+4	+0.16
Females, . . . . .	1,229	1,293	+64	+5.21
Banks, trustees, etc., . . . . .	307	335	+28	+9.12
Aggregates: partners and stockholders, .	4,442	4,531	+89	+2.00

## MACHINES AND MACHINERY — 1897, 1898 — Continued.

## CAPITAL INVESTED.

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . .	\$32,677,927	\$32,686,813	+\$8,886	+0.03

## STOCK USED. AGGREGATE VALUES.

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . .	\$9,276,096	\$10,142,326	+\$866,230	+9.34

## GOODS MADE. AGGREGATE VALUES.

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$26,979,408	\$28,964,913	+\$1,985,505	+7.36

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	18,261	18,658	+397	+2.17
Males, . . . . .	17,950	18,371	+421	+2.35
Females, . . . . .	311	287	—24	—7.72
Smallest number, . . . . .	15,085	15,438	+353	+2.34
Greatest number, . . . . .	21,728	21,634	—94	—0.43
Excess of greatest over smallest number, .	6,643	6,196	—447	—6.73

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	18,070	298	18,368	17,748	293	18,041
February, . . . . .	17,619	316	17,935	17,883	303	18,186
March, . . . . .	17,683	326	18,009	18,142	309	18,451
April, . . . . .	18,949	326	19,275	18,262	314	18,576
May, . . . . .	18,620	316	18,936	18,055	289	18,344

## MACHINES AND MACHINERY — 1897, 1898 — Concluded.

## PERSONS EMPLOYED: BY MONTHS — Concluded.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
June, . . . . .	17,963	294	18,257	18,205	289	18,494
July, . . . . .	17,182	279	17,461	18,012	275	18,287
August, . . . . .	17,286	284	17,570	18,180	229	18,409
September, . . . . .	17,521	304	17,825	18,604	265	18,869
October, . . . . .	17,689	308	18,197	18,938	283	19,221
November, . . . . .	18,216	324	18,540	19,014	281	19,295
December, . . . . .	18,150	322	18,472	19,113	297	19,410

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percentages
Total amount paid in wages, . . . . .	\$9,505,410	\$10,068,181	+\$562,771	+5.92
Average yearly earnings, . . . . .	520.53	539.62	+19.09	+3.67

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	1,256	72	1,328	1,208	75	1,283
\$5 but under \$6, . . . . .	872	74	946	1,105	63	1,168
\$6 but under \$7, . . . . .	1,224	70	1,294	1,125	72	1,197
\$7 but under \$8, . . . . .	1,849	59	1,908	1,706	54	1,760
\$8 but under \$9, . . . . .	1,864	26	1,890	1,717	38	1,755
\$9 but under \$10, . . . . .	2,482	24	2,506	2,533	24	2,557
\$10 but under \$12, . . . . .	3,385	9	3,394	3,299	4	3,303
\$12 but under \$15, . . . . .	4,478	—	4,473	4,662	—	4,662
\$15 but under \$20, . . . . .	3,209	3	3,212	3,288	2	3,290
\$20 and over, . . . . .	716	—	716	722	—	722
TOTALS, . . . . .	21,280	337	21,617	21,365	327	21,692

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percentages
Average proportion of business done, . . . . .	55.11	57.77	+2.66	+4.83
Average number of days in operation, . . . . .	275.71	288.71	+13.00	+4.72

**METALS AND METALLIC GOODS. 1897, 1898.****ESTABLISHMENTS, PARTNERS, ETC.**

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DE- CREASE (-), OR NO CHANGE (=), IN 1898	
			Number	Percent- ages
Number of establishments reporting, . . .	380	380	=	=
Number of private firms, . . . . .	270	268	-2	-0.74
Number of partners, . . . . .	397	390	-7	-1.76
Males, . . . . .	377	371	-6	-1.59
Females, . . . . .	11	9	-2	-18.18
Special, . . . . .	3	3	=	=
Estates, . . . . .	6	7	+1	+16.67
Number of corporations, . . . . .	110	112	+2	+1.82
Number of stockholders, . . . . .	1,875	1,906	+31	+1.65
Males, . . . . .	1,204	1,198	-6	-0.50
Females, . . . . .	501	531	+30	+5.99
Banks, trustees, etc., . . . . .	170	177	+7	+4.12
Aggregates: partners and stockholders, .	2,272	2,296	+24	+1.06

**CAPITAL INVESTED.**

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . . .	\$17,367,796	\$17,191,783	-\$176,013	-1.01

**STOCK USED. AGGREGATE VALUES.**

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . . .	\$9,845,655	\$10,734,998	+\$889,343	+9.03

**GOODS MADE. AGGREGATE VALUES.**

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$21,702,203	\$23,328,223	+\$1,626,020	+7.49

## METALS AND METALLIC GOODS—1897, 1898—Continued.

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	13,444	13,450	+6	+0.04
Males, . . . . .	12,113	12,001	—23	—0.18
Females, . . . . .	1,331	1,359	+28	+2.10
Smallest number, . . . . .	10,958	10,934	—24	—0.22
Greatest number, . . . . .	15,822	16,306	+484	+3.06
Excess of greatest over smallest number, .	4,864	5,372	+508	+10.44

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	11,771	1,250	13,021	12,184	1,361	13,545
February, . . . . .	12,076	1,296	13,372	12,048	1,374	13,422
March, . . . . .	12,109	1,337	13,446	12,307	1,430	13,737
April, . . . . .	12,348	1,377	13,725	12,175	1,393	13,568
May, . . . . .	12,223	1,359	13,582	11,944	1,364	13,308
June, . . . . .	12,015	1,271	13,286	11,651	1,312	12,963
July, . . . . .	11,432	1,233	12,665	11,391	1,212	12,603
August, . . . . .	11,639	1,180	12,819	11,628	1,239	12,867
September, . . . . .	11,990	1,320	13,310	11,971	1,327	13,298
October, . . . . .	12,305	1,439	13,744	12,435	1,404	13,839
November, . . . . .	12,570	1,444	14,014	12,602	1,422	14,024
December, . . . . .	12,643	1,401	14,044	12,552	1,399	13,951

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$6,634,101	\$6,842,531	+\$208,430	+3.14
Average yearly earnings, . . . . .	493.46	508.74	+15.28	+3.10

## METALS AND METALLIC GOODS — 1897, 1898 — Concluded.

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	912	444	1,356	997	489	1,486
\$5 but under \$6, . . . . .	608	345	953	656	343	999
\$6 but under \$7, . . . . .	955	412	1,367	938	453	1,391
\$7 but under \$8, . . . . .	1,008	153	1,161	1,001	185	1,186
\$8 but under \$9, . . . . .	1,062	55	1,107	983	87	1,070
\$9 but under \$10, . . . . .	1,683	61	1,744	1,685	39	1,924
\$10 but under \$12, . . . . .	2,043	50	2,093	2,209	39	2,248
\$12 but under \$15, . . . . .	2,609	6	2,615	2,668	7	2,675
\$15 but under \$20, . . . . .	2,376	4	2,380	2,444	2	2,446
\$20 and over, . . . . .	729	2	731	686	3	689
TOTALS, . . . . .	13,975	1,582	15,507	14,467	1,647	16,114

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (−) IN 1898	
			Proportion and Days	Percentages
Average proportion of business done, . . .	57.65	59.14	+1.49	+2.58
Average number of days in operation, . . .	278.17	280.79	+2.62	+0.94

MUSICAL INSTRUMENTS AND MATERIALS.  
1897, 1898.

## ESTABLISHMENTS, PARTNERS, ETC.

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DECREASE (−), OR NO CHANGE (=), IN 1898	
			Number	Percentages
Number of establishments reporting, . . .	64	64	=	=
Number of private firms, . . . . .	40	39	−1	−2.50
Number of partners, . . . . .	62	62	=	=
Males, . . . . .	58	58	=	=
Females, . . . . .	2	2	=	=
Special, . . . . .	1	1	=	=
Estates, . . . . .	1	1	=	=
Number of corporations, . . . . .	24	25	+1	+4.17
Number of stockholders, . . . . .	306	308	+2	+0.65
Males, . . . . .	220	209	−11	−5.00
Females, . . . . .	65	77	+12	+18.46
Banks, trustees, etc., . . . . .	21	22	+1	+4.76
Aggregates: partners and stockholders, . .	368	370	+2	+0.54



## MUSICAL INSTRUMENTS AND MATERIALS—1897, 1898

— Continued.

## CAPITAL INVESTED.

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percentage
Amount of capital invested, . . . . .	\$3,745,420	\$3,534,222	—\$161,198	—4.30

## STOCK USED. AGGREGATE VALUES.

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percentage
Total value of stock used, . . . . .	\$1,809,001	\$1,803,029	—\$5,972	—0.33

## GOODS MADE. AGGREGATE VALUES.

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percentage
Total value of goods made and work done, .	\$4,802,717	\$5,277,423	+\$474,706	+9.88

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percentage
Average number, . . . . .	2,551	2,664	+113	+4.43
Males, . . . . .	2,401	2,506	+105	+4.37
Females, . . . . .	150	158	+8	+5.33
Smallest number, . . . . .	1,914	2,202	+288	+15.05
Greatest number, . . . . .	2,949	3,064	+115	+3.90
Excess of greatest over smallest number, .	1,035	862	—173	—16.71

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	2,476	137	2,613	2,610	163	2,773
February, . . . . .	2,441	141	2,582	2,567	168	2,735
March, . . . . .	2,517	144	2,661	2,629	166	2,795
April, . . . . .	2,421	142	2,563	2,493	168	2,661
May, . . . . .	2,386	145	2,531	2,330	157	2,487

## MUSICAL INSTRUMENTS AND MATERIALS — 1897, 1898

— Concluded.

## PERSONS EMPLOYED: BY MONTHS — Concluded.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
June, . . . . .	2,356	147	2,503	2,237	149	2,386
July, . . . . .	2,286	144	2,430	2,257	136	2,393
August, . . . . .	2,003	137	2,140	2,366	146	2,512
September, . . . . .	2,312	150	2,462	2,633	151	2,684
October, . . . . .	2,458	161	2,619	2,636	161	2,797
November, . . . . .	2,554	165	2,719	2,677	162	2,839
December, . . . . .	2,601	166	2,767	2,690	173	2,863

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$1,421,381	\$1,519,780	+\$98,399	+6.92
Average yearly earnings, . . . . .	557.19	570.49	+13.30	+2.39

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	163	74	237	166	83	249
\$5 but under \$6, . . . . .	100	41	141	100	57	157
\$6 but under \$7, . . . . .	140	43	183	134	29	163
\$7 but under \$8, . . . . .	134	9	143	144	8	152
\$8 but under \$9, . . . . .	112	2	114	133	2	135
\$9 but under \$10, . . . . .	201	2	203	218	2	220
\$10 but under \$12, . . . . .	338	—	338	346	1	347
\$12 but under \$15, . . . . .	629	2	631	755	2	757
\$15 but under \$20, . . . . .	726	—	726	696	—	696
\$20 and over, . . . . .	187	—	187	169	—	169
TOTALS, . . . . .	2,730	173	2,903	2,861	184	3,035

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percent- ages
Average proportion of business done, . . . . .	55.98	58.80	+2.82	+5.04
Average number of days in operation, . . . . .	272.65	281.76	+9.11	+3.34

## PAPER. 1897, 1898.

## ESTABLISHMENTS, PARTNERS, ETC.

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DE- CREASE (-), OR NO CHANGE (=), IN 1898	
			Number	Percent- ages
Number of establishments reporting, . . .	80	80	=	=
Number of private firms, . . . . .	21	20	-1	-4.76
Number of partners, . . . . .	47	44	-3	-6.33
Males, . . . . .	46	42	-4	-8.70
Estates, . . . . .	1	2	+1	+100.00
Number of corporations, . . . . .	59	60	+1	+1.69
Number of stockholders, . . . . .	1,236	1,265	+29	+2.35
Males, . . . . .	722	743	+21	+2.91
Females, . . . . .	411	401	-10	-2.43
Banks, trustees, etc., . . . . .	103	121	+18	+17.48
Aggregates: partners and stockholders, .	1,283	1,309	+26	+2.03

## CAPITAL INVESTED.

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . . .	\$20,546,478	\$20,733,967	+\$187,489	+0.91

## STOCK USED. AGGREGATE VALUES.

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . . .	\$10,175,492	\$11,166,343	+\$991,851	+9.74

## GOODS MADE. AGGREGATE VALUES.

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$18,131,485	\$20,104,855	+\$1,973,370	+10.88

## PAPER — 1897, 1898 — Continued.

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	8,510	8,797	+287	+3.37
Males, . . . . .	5,067	5,319	+252	+5.18
Females, . . . . .	3,453	3,478	+25	+0.72
Smallest number, . . . . .	7,687	7,972	+285	+3.71
Greatest number, . . . . .	9,070	9,301	+231	+2.55
Excess of greatest over smallest number, .	1,383	1,329	—54	—3.90

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	5,093	3,465	8,558	5,253	3,486	8,739
February, . . . . .	5,109	3,518	8,627	5,297	3,516	8,813
March, . . . . .	5,102	3,536	8,638	5,333	3,535	8,868
April, . . . . .	5,044	3,555	8,599	5,310	3,588	8,898
May, . . . . .	5,020	3,466	8,486	5,410	3,533	8,943
June, . . . . .	4,989	3,453	8,442	5,381	3,519	8,900
July, . . . . .	4,897	3,192	8,089	5,224	3,259	8,483
August, . . . . .	4,950	3,312	8,262	5,226	3,250	8,476
September, . . . . .	5,031	3,445	8,476	5,292	3,442	8,734
October, . . . . .	5,124	3,496	8,620	5,368	3,482	8,845
November, . . . . .	5,147	3,465	8,612	5,382	3,573	8,955
December, . . . . .	5,155	3,517	8,672	5,352	3,519	8,871

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$3,493,786	\$3,719,611	+ \$225,825	+6.46
Average yearly earnings, . . . . .	410.55	422.83	+12.28	+2.99

## PAPER — 1897, 1898 — Concluded.

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	162	944	1,106	150	846	996
\$5 but under \$6, . . . . .	83	970	1,053	94	1,054	1,148
\$6 but under \$7, . . . . .	233	1,070	1,303	236	1,104	1,340
\$7 but under \$8, . . . . .	469	423	892	508	375	883
\$8 but under \$9, . . . . .	611	149	760	690	135	825
\$9 but under \$10, . . . . .	1,297	65	1,362	1,431	63	1,494
\$10 but under \$12, . . . . .	830	14	844	792	18	810
\$12 but under \$15, . . . . .	877	16	893	861	13	874
\$15 but under \$20, . . . . .	640	5	645	656	5	661
\$20 and over, . . . . .	147	—	147	146	—	146
TOTALS, . . . . .	5,349	3,656	9,005	5,564	3,663	9,227

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percentages
Average proportion of business done, . . .	75.70	81.23	+5.53	+7.31
Average number of days in operation, . . .	271.18	281.95	+10.77	+3.97

## WOOLLEN GOODS. AGGREGATES.\* 1897, 1898.

## ESTABLISHMENTS, PARTNERS, ETC.

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DECREASE (—), OR NO CHANGE (=), IN 1898	
			Number	Percentages
Number of establishments reporting, . . .	142	142	=	=
Number of private firms, . . . . .	92	91	—1	—1.09
Number of partners, . . . . .	147	143	—4	—2.72
Males, . . . . .	136	133	—3	—2.21
Females, . . . . .	7	5	—2	—28.57
Special, . . . . .	1	1	=	=
Estates, . . . . .	3	4	+1	+33.33
Number of corporations, . . . . .	50	51	+1	+2.00
Number of stockholders, . . . . .	1,621	1,632	+11	+0.68
Males, . . . . .	704	696	—18	—2.56
Females, . . . . .	630	624	—6	—0.95
Banks, trustees, etc., . . . . .	287	322	+35	+12.20
Aggregates: partners and stockholders, . .	1,768	1,775	+7	+0.40

\* Includes Woven Goods and Yarn, and Shoddy, Waste, etc., details of which are given in the preceding presentations.

**WOOLLEN GOODS. AGGREGATES — 1897, 1898 — Continued.**  
**CAPITAL INVESTED.**

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . .	\$27,792,875	\$26,930,024	—\$862,851	—3.10

**STOCK USED. AGGREGATE VALUES.**

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . .	\$17,415,255	\$19,184,735	+\$1,769,480	+10.16

**GOODS MADE. AGGREGATE VALUES.**

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$29,622,054	\$31,633,903	+\$2,011,849	+6.79

**PERSONS EMPLOYED.**

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	19,285	19,438	+153	+0.79
Males, . . . . .	12,338	12,415	+77	+0.62
Females, . . . . .	6,947	7,023	+76	+1.09
Smallest number, . . . . .	16,559	16,026	—1,533	—9.26
Greatest number, . . . . .	21,576	22,244	+668	+3.10
Excess of greatest over smallest number, .	5,017	7,218	+2,201	+43.87

**PERSONS EMPLOYED: BY MONTHS.**

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	11,528	6,393	17,921	13,404	7,396	20,800
February, . . . . .	11,485	6,485	17,970	13,846	7,457	20,803
March, . . . . .	11,841	6,724	18,565	13,390	7,471	20,861
April, . . . . .	12,162	6,920	19,082	13,224	7,438	20,662
May, . . . . .	12,400	6,950	19,350	12,126	6,917	19,043

## WOOLLEN GOODS. AGGREGATES — 1897, 1898 — Concluded.

## PERSONS EMPLOYED: BY MONTHS — Concluded.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
June, . . . . .	12,090	6,892	18,982	11,916	6,960	18,876
July, . . . . .	12,111	6,969	19,080	11,698	6,548	18,246
August, . . . . .	12,396	7,015	19,411	11,962	6,766	18,728
September, . . . . .	12,329	7,196	20,025	12,018	6,884	18,902
October, . . . . .	13,091	7,848	20,439	12,084	6,841	18,925
November, . . . . .	13,040	7,258	20,298	11,799	6,730	18,529
December, . . . . .	13,011	7,135	20,146	11,891	6,816	18,707

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$7,052,842	\$7,205,613	+\$152,771	+2.17
Average yearly earnings, . . . . .	365.72	370.70	+4.98	+1.36

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	1,363	2,046	3,409	1,326	2,006	3,331
\$5 but under \$6, . . . . .	1,185	1,498	2,683	1,116	1,432	2,548
\$6 but under \$7, . . . . .	2,202	1,501	3,703	2,195	1,502	3,697
\$7 but under \$8, . . . . .	2,378	1,204	3,582	2,412	1,289	3,701
\$8 but under \$9, . . . . .	1,574	890	2,404	1,687	845	2,532
\$9 but under \$10, . . . . .	1,859	416	2,275	1,868	496	2,354
\$10 but under \$12, . . . . .	1,533	230	1,763	1,769	274	2,043
\$12 but under \$15, . . . . .	1,012	58	1,070	1,098	71	1,169
\$15 but under \$20, . . . . .	426	4	430	478	4	482
\$20 and over, . . . . .	214	—	214	227	—	227
TOTALS, . . . . .	13,746	7,787	21,533	14,166	7,908	22,074

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percent- ages
Average proportion of business done, . . .	78.32	75.77	—2.55	—3.26
Average number of days in operation, . . .	285.45	279.58	—5.87	—2.06

**WORSTED GOODS. 1897, 1898.****ESTABLISHMENTS, PARTNERS, ETC.**

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DE- CREASE (-), OR NO CHANGE (=), IN 1898	
			Number	Percent- ages
Number of establishments reporting, . . .	35	35	=	=
Number of private firms, . . . . .	16	16	=	=
Number of partners, . . . . .	34	33	-1	-2.94
Males, . . . . .	30	32	+2	+6.67
Females, . . . . .	1	1	=	=
Special, . . . . .	3	-	-3	-100.00
Number of corporations, . . . . .	19	19	=	=
Number of stockholders, . . . . .	678	696	+18	+2.65
Males, . . . . .	406	392	-14	-3.45
Females, . . . . .	168	182	+14	+8.33
Banks, trustees, etc., . . . . .	104	122	+18	+17.31
Aggregates: partners and stockholders, .	712	729	+17	+2.39

**CAPITAL INVESTED.**

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . . .	\$16,802,284	\$17,166,388	+\$364,104	+2.17

**STOCK USED. AGGREGATE VALUES.**

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . . .	\$15,070,871	\$15,923,830	+\$852,959	+5.66

**GOODS MADE. AGGREGATE VALUES.**

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$24,604,793	\$25,818,780	+\$1,123,987	+4.55



## WORSTED GOODS—1897, 1898—Continued.

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	12,975	13,107	+132	+1.02
Males, . . . . .	7,068	7,044	—14	—0.20
Females, . . . . .	5,917	6,063	+146	+2.47
Smallest number, . . . . .	11,744	10,025	—1,719	—14.64
Greatest number, . . . . .	14,130	14,791	+661	+4.68
Excess of greatest over smallest number, .	2,386	4,766	+2,380	+100.75

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	6,508	5,517	12,020	7,371	6,250	13,621
February, . . . . .	6,840	5,675	12,515	7,542	6,395	13,937
March, . . . . .	6,931	5,755	12,686	7,703	6,576	14,279
April, . . . . .	7,211	5,941	13,152	6,510	5,625	12,135
May, . . . . .	7,117	5,998	13,110	5,658	5,131	10,789
June, . . . . .	6,990	5,878	12,868	7,350	6,270	13,620
July, . . . . .	6,987	5,917	12,904	7,338	6,311	13,649
August, . . . . .	7,131	5,942	13,073	7,166	6,118	13,284
September, . . . . .	7,118	5,906	13,024	6,044	5,295	11,339
October, . . . . .	7,414	6,149	13,563	7,150	6,149	13,299
November, . . . . .	7,423	6,267	13,690	7,378	6,452	13,830
December, . . . . .	7,031	6,042	13,073	7,293	6,170	13,463

## WAGES AND EARNINGS.

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$4,655,439	\$4,789,876	+\$134,437	+2.89
Average yearly earnings, . . . . .	358.80	365.44	+6.64	+1.85

## WORSTED GOODS—1897, 1898—Concluded.

## CLASSIFIED WEEKLY EARNINGS.

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	785	1,370	2,155	832	1,609	2,441
\$5 but under \$6, . . . . .	752	1,379	2,631	824	1,817	2,641
\$6 but under \$7, . . . . .	1,158	1,694	2,852	1,328	1,752	3,080
\$7 but under \$8, . . . . .	1,279	655	1,934	1,377	716	2,093
\$8 but under \$9, . . . . .	664	373	1,037	661	412	1,073
\$9 but under \$10, . . . . .	767	234	1,001	797	224	1,021
\$10 but under \$12, . . . . .	1,142	225	1,367	948	179	1,127
\$12 but under \$15, . . . . .	789	35	824	817	54	871
\$15 but under \$20, . . . . .	202	6	208	242	10	252
\$20 and over, . . . . .	107	2	109	123	1	124
TOTALS, . . . . .	7,645	6,473	14,118	7,949	6,774	14,723

## PROPORTION OF BUSINESS DONE.

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (−) IN 1898	
			Proportion and Days	Percent-ages
Average proportion of business done, . . .	82.63	76.74	−5.89	−7.13
Average number of days in operation, . . .	293.58	266.50	−27.08	−9.22

## ALL INDUSTRIES. 1897, 1898.

## ESTABLISHMENTS, PARTNERS, ETC.

NUMBER OF ESTABLISHMENTS CONSIDERED, PARTNERS, ETC.	1897	1898	INCREASE (+), DECREASE (−), OR NO CHANGE (=), IN 1898	
			Number	Percent-ages
Number of establishments reporting, . . .	4,701	4,701	=	=
Number of private firms, . . . . .	3,509	3,464	−45	−1.28
Number of partners, . . . . .	5,572	5,424	−148	−2.66
Males, . . . . .	5,322	5,170	−152	−2.86
Females, . . . . .	144	139	−5	−3.47
Special, . . . . .	42	34	−8	−19.05
Estates, . . . . .	64	81	+17	+26.56
Number of corporations, . . . . .	1,142	1,172	+30	+2.63
Number of stockholders, . . . . .	46,407	46,827	+420	+0.91
Males, . . . . .	26,055	25,822	−233	−0.89
Females, . . . . .	15,131	15,456	+325	+2.16
Banks, trustees, etc., . . . . .	5,221	5,549	+328	+6.28
Aggregates: partners and stockholders, . .	51,979	52,251	+272	+0.52

## ALL INDUSTRIES — 1897, 1898 — Continued.

## CAPITAL INVESTED.

CAPITAL INVESTED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Amount of capital invested, . . . .	\$418,290,097	\$418,373,953	+\$83,856	+0.02

## STOCK USED. AGGREGATE VALUES.

STOCK USED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of stock used, . . . .	\$354,314,944	\$362,846,417	+\$8,531,473	+2.41

## GOODS MADE. AGGREGATE VALUES.

GOODS MADE.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amount	Percent- age
Total value of goods made and work done, .	\$612,568,342	\$640,371,843	+\$28,303,501	+4.62

## PERSONS EMPLOYED.

PERSONS EMPLOYED.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Number	Percent- ages
Average number, . . . . .	326,778	332,669	+5,891	+1.80
Males, . . . . .	216,821	219,560	+2,739	+1.26
Females, . . . . .	109,957	113,109	+3,152	+2.87
Smallest number, . . . . .	272,204	271,847	—357	—0.13
Greatest number, . . . . .	377,399	386,383	+8,984	+2.38
Excess of greatest over smallest number, .	105,195	114,536	+9,341	+8.88

## PERSONS EMPLOYED: BY MONTHS.

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
January, . . . . .	212,932	109,855	322,787	217,340	118,836	331,176
February, . . . . .	214,190	110,015	324,205	217,753	112,990	330,743
March, . . . . .	216,777	111,385	328,162	222,104	114,919	337,023
April, . . . . .	220,883	112,119	333,002	222,112	114,560	336,672
May, . . . . .	221,190	111,989	333,179	218,049	110,970	329,019

**ALL INDUSTRIES — 1897, 1898 — Concluded.**  
**PERSONS EMPLOYED: BY MONTHS — Concluded.**

MONTHS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
June, . . . . .	216,312	108,384	324,696	217,707	111,156	328,863
July, . . . . .	209,361	102,728	312,089	215,587	108,781	324,318
August, . . . . .	209,327	100,691	310,018	217,176	108,978	326,154
September, . . . . .	217,094	110,806	327,900	218,283	111,074	329,357
October, . . . . .	220,997	113,687	334,684	222,740	115,461	338,201
November, . . . . .	220,809	113,638	334,447	221,496	116,081	337,527
December, . . . . .	219,385	113,209	332,594	221,711	117,023	338,734

**WAGES AND EARNINGS.**

WAGES AND EARNINGS.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Amounts	Percent- ages
Total amount paid in wages, . . . . .	\$137,986,438	\$140,212,103	+\$2,225,665	+1.61
Average yearly earnings, . . . . .	422.26	421.48	—0.78	—0.18

**CLASSIFIED WEEKLY EARNINGS.**

CLASSIFICATION OF WEEKLY EARNINGS.	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . . .	21,217	33,328	54,545	23,269	37,015	60,284
\$5 but under \$6, . . . . .	14,232	23,785	38,017	15,767	24,322	40,089
\$6 but under \$7, . . . . .	21,507	23,562	45,069	21,993	23,527	45,520
\$7 but under \$8, . . . . .	23,324	17,216	40,540	24,349	17,479	41,828
\$8 but under \$9, . . . . .	22,717	12,276	34,993	23,210	11,818	34,928
\$9 but under \$10, . . . . .	30,329	6,899	37,228	31,157	6,677	37,834
\$10 but under \$12, . . . . .	35,354	5,863	40,717	35,733	5,487	41,220
\$12 but under \$15, . . . . .	41,389	2,636	43,975	40,242	2,891	43,133
\$15 but under \$20, . . . . .	29,588	787	30,375	29,904	720	30,624
\$20 and over, . . . . .	9,412	130	9,542	9,896	108	9,904
TOTALS, . . . . .	249,019	125,982	375,001	255,020	129,544	384,564

**PROPORTION OF BUSINESS DONE.**

PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION.	1897	1898	INCREASE (+) OR DECREASE (—) IN 1898	
			Proportion and Days	Percent- ages
Average proportion of business done, . . . . .	60.60	61.19	+0.59	+0.97
Average number of days in operation, . . . . .	284.05	286.28	+2.23	+0.79



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# ANALYSIS.

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[ 157 ]



## ANALYSIS.

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The statistical presentations contained in the preceding pages, 1 to 156, have been prepared from the returns made by 4,701 identical establishments covering each of the years 1897 and 1898.

These reports, as has been stated in previous volumes, do not cover all the establishments engaged in the manufacturing and mechanical industries of the Commonwealth, and their somewhat restricted character is again pointed out in order that unwarranted assumptions regarding them may not be made. Nevertheless, the method adopted by this Department of presenting comparative reports, based on identical establishments making returns in two consecutive years, furnishes reliable data from which deductions may be drawn as to the condition of individual industries as well as of the total manufacturing output of the State. The result of an especial effort to obtain complete returns of the Textile Industries for the years to which this volume particularly relates, affords additional proof that the condition of our industries in the aggregate, may be denoted by the returns received from a considerable number of representative establishments, notwithstanding the number may be small when compared with the total number heretofore represented in a Census.\* The figures for "All Industries," a term used in these reports for totals, must be understood to refer, therefore, only to the numerical aggregates supplied by the addition of the various columns in the presentations, and not to the total investment, production, persons, wages, etc., of all the manufacturing and mechanical industries of the Commonwealth. Such totals are only presented in Decennial Census Reports. The purpose of the annual returns, however, as has previously been explained, is to indicate industrial conditions year by year.

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\* See the INTRODUCTION, THE TEXTILE INDUSTRIES, and INDUSTRIAL CHRONOLOGY (Amesbury and Brockton).



The statistical presentations in this volume are arranged in two sections; the first section, pages 1 to 112, covers the returns made by 4,701 identical establishments for each of the years 1897 and 1898, arranged under the sub-heads of Private Firms and Corporations; Partners and Stockholders; Capital Invested; Stock Used; Goods Made; Persons Employed; Wages Paid; and Proportion of Business Done and Days in Operation. The second section, pages 113 to 156, is devoted to detailed presentations for 15 leading industries, all of the statistical facts relating to each industry being grouped under its respective title. The following analysis deals only with the presentations found on pages 1 to 112.

Whenever the term "All Industries," is used in this volume, it will be understood as referring to the classified industries mentioned in the first table, pages 4 to 7, and should not be confounded with the total production in all of the establishments engaged in the manufacturing and mechanical industries of the Commonwealth, which is shown only once in ten years.

#### PRIVATE FIRMS AND CORPORATIONS; PARTNERS AND STOCKHOLDERS: BY INDUSTRIES.

The presentations containing the information relative to private firms and corporations and partners and stockholders will be found on pages 4 to 11. As previously stated, 4,701 establishments made return for each of the years 1897 and 1898. In 1897, these establishments were managed by 3,509 private firms and 1,142 corporations, and in 1898, by 3,464 private firms and 1,172 corporations, a decrease of 1.28 per cent in the number of private firms and an increase of 2.63 per cent in the number of corporations.

The effect of this change from private ownership to the corporate form of management is shown in the following table:

CLASSIFICATION.	NUMBER		PERCENTAGES	
	1897	1898	1897	1898
Private firms, . . . . .	3,509	3,464	75.45	74.72
Corporations, . . . . .	1,142	1,172	24.55	25.28
TOTALS, . . . . .	4,651	4,636	100.00	100.00

It will be seen from the above table that the relation of private firms to corporations remains the same in both years, the variation in percentages being too small to be of moment, though exhibiting the continued tendency to change from the private firm to the corporation.

We have previously stated that returns were made by 4,701 establishments. The figures in the above table, however, apparently include but 4,651 establishments in 1897 and 4,636 establishments in 1898. This apparent discrepancy is fully explained in the head-notes to the presentations on pages 4 and 5 and 8 and 9. It is there stated that there are duplications to be found in the columns devoted to private firms and corporations and that these duplications are caused by the fact that the same firm or corporation is often engaged in conducting one or more establishments in different towns or in different industries; that the plan adopted has been to consider each establishment, whether managed in connection with another or not, as a unit, and to credit to each industry the full number of firms and corporations managing the establishments, but, when considering the total for All Industries, to deduct the duplications. With this explanation, it is at once apparent that in 1897 there were 50 instances where the same firm or corporation controlled one or more establishments, and in 1898 there were 65 such instances. The increase in 1898 is due to the fact that the "trust," "syndicate," or perhaps the term "combination" best expresses the idea, has shown further development in this State, the largest concentration being in Paper and in Paper Goods. The ultimate result of this continual absorption of establishments under one management is, of course, difficult to determine at the present moment.

The word "establishment" as used in this report means the factory, mill, or shop from which a report was received, and not the firm or corporation controlling said factory, mill, or shop. There are no duplications so far as the establishments are concerned. The same partners and stockholders, if connected with more than one establishment, are credited under the above mentioned plan to each industry, but are counted only once in making up the total for All Industries.

A classification of the partners composing the 3,509 private

firms in 1897 and the 3,464 private firms in 1898 are shown for each year, by sex, in the following table :

PARTNERS.	NUMBER		PERCENTAGES	
	1897	1898	1897	1898
Males, . . . . .	5,322	5,170	95.51	95.32
Females, . . . . .	144	139	2.59	2.56
Special and estates, . . . . .	106	115	1.90	2.12
TOTALS, . . . . .	5,572	5,424	100.00	100.00

The number of males declined from 5,322 in 1897 to 5,170 in 1898, a decrease of 152 persons, or 2.86 per cent. The females declined 3.47 per cent, special partners 19.05 per cent, while the estates increased from 64 to 81, a gain of 26.56 per cent. The relative proportions of the sexes are practically the same in both years.

A classification of stockholders by sex is shown in the following table :

STOCKHOLDERS.	NUMBER		PERCENTAGES	
	1897	1898	1897	1898
Males, . . . . .	26,055	25,822	56.14	55.14
Females, . . . . .	15,131	15,456	32.61	33.01
Banks, trustees, etc., . . . . .	5,221	5,549	11.25	11.85
TOTALS, . . . . .	46,407	46,827	100.00	100.00

The total number of stockholders increased from 46,407 to 46,827 an increase of 420 persons, or 0.91 per cent. The males decreased 0.89 per cent, while the females increased 2.15 per cent; and banks, trustees, etc., 6.28 per cent. The proportions of males and females, however, remain about the same; although, as pointed out in previous reports, the number of females interested as stockholders in manufacturing enterprises continues to increase.

The aggregate of partners and stockholders shows an increase from 51,979 in 1897 to 52,251 in 1898, a net increase of 272 persons, or 0.52 per cent. The effect of the change from private firm to corporation upon the number of partners and stockholders in the aggregate and in the average, is shown in the following table :

CLASSIFICATION.	NUMBER	
	1897	1898
Private firms, . . . . .	3,509	3,464
Partners, . . . . .	5,572	5,424
Average number of partners to a private firm, . . . . .	1.59	1.57
Corporations, . . . . .	1,142	1,172
Stockholders, . . . . .	46,407	46,827
Average number of stockholders to a corporation, . . . . .	40.64	39.95

The average number of partners to a private firm was 1.59 in 1897 and 1.57 in 1898. The average number of stockholders to a corporation was 40.64 in 1897 and 39.95 in 1898. While the number of private firms declined from 3,509 to 3,464 the average number of partners to a private firm remained practically the same in each year, and the same is true of the average stockholders to a corporation, the number of which increased from 1,142 to 1,172.

The returns relating to private firms, corporations, partners, and stockholders for 1898 are condensed in the following summary: The returns represent 4,701 establishments found in 80 different industries. The establishments are conducted by 3,464 private firms and 1,172 corporations. In other words, 74.72 per cent of the establishments are in the hands of private firms and 25.28 per cent in the hands of corporations. The private firms and corporations are managed by 52,251 persons of whom 5,424, or 10.38 per cent are partners and 46,827, or 89.62 per cent are stockholders. Of the partners 95.32 per cent are males, 2.56 per cent females, and 2.12 per cent special partners and estates. Of the stockholders 55.14 per cent are males, 33.01 per cent females, and 11.85 per cent banks, trustees, etc. The average number of partners to a private firm is 1.57, and the average number of stockholders to a corporation, 39.95.

### CAPITAL INVESTED: BY INDUSTRIES.

On pages 14 and 15, comparison is made of the amount of capital invested in the 4,701 establishments making return in 1897 and 1898. The total amount reported in 1897 was \$413,290,097 and in 1898, \$413,373,953, an increase in the

last named year of \$83,856, or 0.02 per cent. The percentages of increase range from 0.03 in Machines and Machinery to 44.66 in Crayons, Pencils, Crucibles, etc., while the range of decrease is from 0.04 per cent in Leather Goods to 60.95 per cent in Fireworks and Matches. Although the aggregate for Boots and Shoes shows a decrease of 3.39 per cent, one of the subdivisions of this industry (Boot and Shoe Findings) shows an increase of 8.94 per cent. Carpetings, in the aggregate, shows a decline of 2.98 per cent, while the subdivision Carpetings, other than textile, exhibits an increase of 28.41 per cent. The capital returned for Cotton Goods, in the aggregate, shows the slight falling off in 1898 of 0.65 per cent, while two of the subdivisions, Cotton Yarn and Thread, and Cotton Waste, show increases of 4.88 and 1.84 per cent, respectively.

The facts for the leading industries are brought forward in the following table :

INDUSTRIES.	Number of Establishments Considered	AMOUNT OF CAPITAL INVESTED		INCREASE (+) OR DECREASE (−) IN 1898	
		1897	1898	Amounts	Percentages
Boots and shoes, . . . .	644	\$23,200,058	\$22,414,665	−\$785,393	−3.39
Carpetings, . . . . .	12	6,784,921	6,582,652	−202,269	−2.98
Cotton goods, . . . . .	169	113,437,432	112,702,330	−735,102	−0.65
Leather, . . . . .	95	6,231,541	6,533,029	+301,488	+4.84
Machines and machinery, . .	359	32,677,927	32,686,813	+8,886	+0.03
Metals and metallic goods, .	380	17,367,796	17,191,783	−176,013	−1.01
Paper, . . . . .	80	20,546,478	20,733,967	+187,489	+0.91
Woollen goods, . . . . .	142	27,792,375	26,930,024	−862,351	−3.10
Worsted goods, . . . . .	35	16,802,284	17,166,888	+364,604	+2.17
Nine industries, . . . . .	1,916	264,841,312	262,941,651	−1,899,661	−0.72
Other industries, . . . . .	2,785	148,448,785	150,432,302	+1,983,517	+1.34
All industries, . . . . .	4,701	413,290,097	413,373,953	+83,856	+0.02

The industries named in detail in the above table are the principal ones in the Commonwealth, having invested in them at the time of the Decennial Census in 1895, 56.89 per cent of the total amount of capital invested in all manufacturing and mechanical industries. The 1,916 establishments considered in these principal industries, contained 63.61 per cent of the total capital invested in the 4,701 establishments represented in All Industries in 1898. There was a slight decrease of 0.72 per cent in the capital invested in the nine industries as a whole. The other industries, however, exhibit a gain of

1.34 per cent, a somewhat larger increase than that shown for All Industries. Of the nine industries in detail, a decrease is found in Boots and Shoes, Carpetings, Cotton Goods, Metals and Metallic Goods, and Woollen Goods, while in each of the other selected industries an increase is found. In order to guard against unwarranted deductions based upon a superficial examination of these reports, we repeat the statement that the term "capital," as used herein, does not mean merely cash capital or capital stock, but includes all legitimate forms of capital devoted to production; and it is, of course, obvious that some of the elements thus included are variable and liable to more or less fluctuation from year to year. For a more detailed statement relative to capital the reader is referred to the report for 1897, pages 158 to 161.

### STOCK USED: BY INDUSTRIES.

The term "stock used" includes all kinds of materials used in the establishment, whether entering into the fabric or consumed in the processes necessary to the production of goods.

On pages 18 and 19 may be found a comparison of the value of stock used in the 4,701 establishments making return in 1897 and 1898. In All Industries, in 1897, the total value of stock used was \$354,314,944 and in 1898, \$362,846,417, an increase in 1898 of \$8,531,473, or 2.41 per cent. For the purpose of comparison, the following table, showing the value of stock used in the nine leading industries, the other industries, and All Industries, is presented:

INDUSTRIES.	Number of Establishments Considered	VALUE OF STOCK USED		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Amounts	Percentages
Boots and shoes, . . . .	644	\$65,182,608	\$67,386,674	+\$2,204,066	+3.38
Carpetings, . . . . .	12	3,698,404	3,638,475	—259,929	—6.67
Cotton goods, . . . . .	169	50,857,806	47,294,087	—3,563,719	—7.01
Leather, . . . . .	95	14,532,557	14,929,168	+396,611	+2.73
Machines and machinery, . .	359	9,276,096	10,142,326	+866,230	+9.34
Metals and metallic goods, .	380	9,846,655	10,734,998	+889,343	+9.03
Paper, . . . . .	80	10,175,492	11,166,843	+991,351	+9.74
Woollen goods, . . . . .	142	17,415,255	19,184,735	+1,769,480	+10.16
Worsted goods, . . . . .	35	15,070,871	15,923,880	+852,959	+5.66
Nine industries, . . . . .	1,916	196,254,744	200,401,136	+4,146,392	+2.11
Other industries, . . . . .	2,785	158,060,200	162,446,281	+4,385,081	+2.77
All industries, . . . . .	4,701	354,314,944	362,846,417	+8,531,473	+2.41

The value of stock used in the nine leading industries, as a whole, increased 2.11 per cent in 1898 as compared with 1897, or, at practically the same ratio as the increase in other industries and All Industries. Only two of the nine industries, Carpetings and Cotton Goods, show a decreased value of stock consumed, each of the others exhibiting increases ranging from 2.73 per cent in Leather to 10.16 per cent in Woollen Goods.

### GOODS MADE: BY INDUSTRIES.

On pages 22 and 23 is presented a comparison of the value of goods made and work done in the 4,701 establishments making returns in each of the years 1897 and 1898. The aggregate value of goods made in 1897 was \$612,568,342 rising to \$640,871,843 in 1898, an increase in the latter year of \$28,303,501, or 4.62 per cent.

In the following table, we give the value of goods made and work done for the nine leading industries, the other industries, and All Industries :

INDUSTRIES.	Number of Establishments Considered	VALUE OF GOODS MADE AND WORK DONE		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Amounts	Percentages
Boots and shoes, . . . .	644	\$104,042,441	\$107,188,480	+\$3,146,019	+3.02
Carpetings, . . . . .	12	6,364,709	6,016,943	—347,766	—5.46
Cotton goods, . . . . .	169	88,272,454	88,374,733	+102,279	+0.12
Leather, . . . . .	95	19,317,480	19,647,769	+330,289	+1.71
Machines and machinery, .	359	26,979,408	28,964,913	+1,985,505	+7.36
Metals and metallic goods, .	380	21,702,203	23,328,223	+1,626,020	+7.49
Paper, . . . . .	80	18,131,485	20,104,855	+1,973,370	+10.88
Woollen goods, . . . . .	142	29,622,054	31,633,903	+2,011,849	+6.79
Worsted goods, . . . . .	35	24,694,793	25,818,780	+1,123,987	+4.55
Nine industries, . . . . .	1,916	339,127,027	351,078,579	+11,951,552	+3.52
Other industries, . . . .	2,785	273,441,315	289,793,264	+16,351,949	+5.98
All industries, . . . . .	4,701	612,568,342	640,871,843	+28,303,501	+4.62

In 1895, the date of the last Census, the value of product in these nine leading industries represented 47.44 per cent of the aggregate value of goods made in all manufacturing and mechanical industries in the State. In 1898, the output in these same industries represented 54.78 per cent of the aggregate product value of the 80 industries shown in this report. With

the exception of Carpetings, each of the nine industries shows an increase in product value, the lowest percentage of increase being 0.12 in Cotton Goods and the highest, 10.88, in Paper.

In the following table, we present the increase or decrease in the value of goods made and work done each year, as shown by former published reports, beginning with 1886 :

COMPARATIVE YEARS.	Number of Establish- ments Considered in Each Year Compared	INCREASE (+) OR DECREASE (—) IN VALUE OF GOODS MADE AND WORK DONE IN EACH YEAR AS COMPARED WITH THE PREVIOUS YEAR	
		Amounts	Percentages
1886, 1887, . . . . .	1,027	+\$18,919,859	+5.29
1887, 1888, . . . . .	1,140	+11,168,095	+3.61
1888, 1889, . . . . .	1,364	+9,653,992	+2.45
1889, 1890, . . . . .	3,041	+22,838,970	+4.37
1890, 1891, . . . . .	3,745	+8,068,053	+1.33
1891, 1892, . . . . .	4,473	+33,180,865	+5.37
1892, 1893, . . . . .	4,397	—51,793,852	—8.10
1893, 1894, . . . . .	4,093	—66,793,448	—10.27
1894, 1895, . . . . .	3,629	+43,048,021	+9.18
1895, 1896, . . . . .	4,609	—31,376,727	—5.51
1896, 1897, . . . . .	4,695	+16,906,553	+3.04
1897, 1898, . . . . .	4,701	+28,303,501	+4.62

From the above table it is seen that in each two comparative years, from 1886–1887 to 1891–1892, there was an increase in the value of goods made and work done. In 1892–1893 and 1893–1894, decreases are shown, followed in 1894–1895 by an increase, and followed in turn by a decline in 1895–1896. In the last two comparisons, 1896–1897 and 1897–1898, increases are found. It will be noted that the number of establishments reporting varies in the above table, increasing from 1,027 comparative returns in 1886–1887 to 4,473 in 1891–1892, and then decreasing gradually to 3,629 in 1894–1895, the year of the Decennial Census, from which time increase is shown, the largest number of establishments being compared in the present volume. It should not be assumed, however, that percentage of decrease in the value of product shown in certain years was entirely due to the decrease in the number of establishments compared, nor, on the contrary, does an increased number of establishments necessarily mean an increase in the value of product.



## PERSONS EMPLOYED: BY INDUSTRIES.

The statistical presentations covering employment will be found on pages 25 to 68. The first table gives a comparison of the average number of persons employed by sex for 1897 and 1898. In the following analysis table, drawn therefrom, are shown percentages of males and females employed in the nine leading industries, in the other industries, and in All Industries, for 1897 and 1898 in comparison with the Census returns of 1875, 1885, and 1895:

INDUSTRIES AND SEX.	PERCENTAGES				
	1875	1885	1895	1897	1898
<i>Boots and Shoes.</i>	100.00	100.00	100.00	100.00	100.00
Males, . . . . .	76.45	69.46	69.35	69.34	68.69
Females, . . . . .	23.55	30.54	30.65	30.66	31.31
<i>Carpetings.</i>	100.00	100.00	100.00	100.00	100.00
Males, . . . . .	43.25	42.12	47.79	48.86	50.61
Females, . . . . .	56.75	57.88	52.21	51.14	49.39
<i>Cotton Goods.</i>	100.00	100.00	100.00	100.00	100.00
Males, . . . . .	41.24	44.96	49.55	50.61	50.79
Females, . . . . .	58.76	55.04	50.45	49.39	49.21
<i>Leather.</i>	*100.00	*100.00	*100.00	100.00	100.00
Males, . . . . .	96.59	97.85	95.70	99.48	99.54
Females, . . . . .	3.41	2.15	4.30	0.52	0.46
<i>Machines and Machinery.</i>	100.00	100.00	100.00	100.00	100.00
Males, . . . . .	97.36	98.57	98.32	98.30	98.46
Females, . . . . .	2.64	1.43	1.68	1.70	1.54
<i>Metals and Metallic Goods.</i>	100.00	100.00	100.00	100.00	100.00
Males, . . . . .	91.98	90.95	91.99	90.10	89.90
Females, . . . . .	8.02	9.05	8.01	9.90	10.10
<i>Paper.</i>	†100.00	†100.00	†100.00	100.00	100.00
Males, . . . . .	42.51	56.08	55.34	59.42	60.46
Females, . . . . .	57.49	43.92	44.66	40.58	39.54
<i>Woollen Goods.</i>	100.00	100.00	100.00	100.00	100.00
Males, . . . . .	59.54	61.60	64.83	63.98	63.87
Females, . . . . .	40.46	38.40	35.17	36.02	36.13
<i>Worsted Goods.</i>	100.00	100.00	100.00	100.00	100.00
Males, . . . . .	38.69	42.13	52.10	54.40	53.74
Females, . . . . .	61.31	57.87	47.90	45.60	46.26

\* Includes the manufacture of Leather Goods which in 1897 and 1898 is presented as a separate industry.

† Includes the manufacture of Paper Goods which in 1897 and 1898 is presented as a separate industry.

INDUSTRIES AND SEX.		PERCENTAGES				
		1875	1885	1895	1897	1898
<i>Nine Industries.</i>		100.00	100.00	100.00	100.00	100.00
Males, . . . . .		63.58	65.42	65.88	64.57	64.60
Females, . . . . .		36.42	34.58	34.12	35.43	35.40
<i>Other Industries.</i>		100.00	100.00	100.00	100.00	100.00
Males, . . . . .		76.64	74.83	75.15	69.73	68.61
Females, . . . . .		23.36	25.17	24.85	30.27	31.39
<b>ALL INDUSTRIES.</b>		100.00	100.00	100.00	100.00	100.00
Males, . . . . .		69.36	69.55	69.87	66.35	66.00
Females, . . . . .		30.64	30.45	30.13	33.65	34.00

With regard to the nine industries in the aggregate, the percentages of males employed in 1897 was 64.57 and in 1898, 64.60; the percentages of females, being the complements of the percentages of males, exhibit a slight loss to balance the slight gain shown for the males. There are no marked variations in the percentages shown for 1897 and 1898 as compared with those for the three Census years 1875, 1885, and 1895. For example, the above table shows that for All Industries out of every 100 persons employed in 1875 about 69 (69.36) were males and about 31 (30.64) were females. In 1885, about 70 (69.55) out of every 100 were males and about 30 (30.45) females, a fluctuation of about one per cent. In 1895, about the same number in every 100 persons employed is shown, though the percentages vary slightly. When we consider 1897 and 1898 we find practically the same conditions of employment, that is, about 66 in every 100 persons employed were males and about 34 females. The uniformity of the percentages in the last two years is undoubtedly due in large measure to the method pursued in presenting the figures, viz: on the basis of identical establishments, whereas the figures for the Census years represent the returns of all establishments engaged in manufacturing or mechanical industries.

From the presentation on pages 26 and 27 we bring forward in the following table, the average number of males employed during the years 1897 and 1898, for the nine leading industries, the other industries, and All Industries in the aggregate:

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUMBER OF MALES EMPLOYED		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Number	Percent- ages
Boots and shoes, . . . . .	644	34,709	35,650	+941	+2.71
Carpetings, . . . . .	12	2,259	2,127	-132	-5.84
Cotton goods, . . . . .	169	41,094	41,332	+238	+0.58
Leather, . . . . .	95	5,568	5,440	-128	-2.30
Machines and machinery, . . . .	359	17,950	18,371	+421	+2.35
Metals and metallic goods, . . .	380	12,113	12,091	-22	-0.18
Paper, . . . . .	80	5,057	5,319	+262	+5.18
Woollen goods, . . . . .	142	12,338	12,415	+77	+0.62
Worsted goods, . . . . .	35	7,058	7,044	-14	-0.20
Nine industries, . . . . .	1,916	138,146	139,789	+1,643	+1.19
Other industries, . . . . .	2,785	78,675	79,771	+1,096	+1.39
All industries, . . . . .	4,701	216,821	219,560	+2,739	+1.26

From this table it appears that in All Industries the average number of males employed increased 1.26 per cent in 1898 as compared with 1897, and that the percentage of increase was practically the same for the nine industries in the aggregate, and for the other industries. With the exceptions of Carpetings, Leather, Metals and Metallic Goods, and Worsted Goods, an increase is shown for each of the nine leading industries.

The next table relates to the average number of females employed.

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUMBER OF FEMALES EMPLOYED		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Number	Percent- ages
Boots and shoes, . . . . .	644	15,346	16,247	+901	+5.87
Carpetings, . . . . .	12	2,364	2,076	-288	-12.18
Cotton goods, . . . . .	169	40,101	40,053	-48	-0.12
Leather, . . . . .	95	29	25	-4	-13.79
Machines and machinery, . . . .	359	311	287	-24	-7.72
Metals and metallic goods, . . .	380	1,331	1,359	+28	+2.10
Paper, . . . . .	80	3,453	3,478	+25	+0.72
Woollen goods, . . . . .	142	6,947	7,023	+76	+1.09
Worsted goods, . . . . .	35	5,917	6,063	+146	+2.47
Nine industries, . . . . .	1,916	75,799	76,611	+812	+1.07
Other industries, . . . . .	2,785	34,158	36,498	+2,340	+6.85
All industries, . . . . .	4,701	109,957	113,109	+3,152	+2.87

From the above table, a greater variation in the employment of females than in that of males in All Industries is to be noted, although the percentage of increase in the nine leading industries in the aggregate, is practically the same as was shown in the table for males. The increase in 1898 as against 1897 for All Industries is 2.87 per cent, while for the other industries it reaches 6.85 per cent. Four of the nine leading industries show a decrease in females employed, namely, Carpetings, Cotton Goods, Leather, and Machines and Machinery; the others exhibit increases.

The next table, brought forward from the presentation on pages 28 and 29, considers the total of both sexes.

INDUSTRIES.	Number of Establishments Considered	AVERAGE NUMBER OF PERSONS EMPLOYED: BOTH SEXES		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Number	Percentages
Boots and shoes, . . . . .	644	50,055	51,897	+1,842	+3.68
Carpetings, . . . . .	12	4,623	4,203	—420	—9.09
Cotton goods, . . . . .	169	81,195	81,385	+190	+0.23
Leather, . . . . .	95	5,597	5,465	—132	—2.36
Machines and machinery, . . . . .	359	18,261	18,658	+397	+2.17
Metals and metallic goods, . . . . .	380	13,444	13,450	+6	+0.04
Paper, . . . . .	80	8,510	8,797	+287	+3.37
Woollen goods, . . . . .	142	19,285	19,438	+153	+0.79
Worsted goods, . . . . .	35	12,975	13,107	+132	+1.02
Nine industries, . . . . .	1,916	213,945	216,400	+2,455	+1.15
Other industries, . . . . .	2,785	112,833	116,269	+3,436	+3.05
All industries, . . . . .	4,701	326,778	332,669	+5,891	+1.80

When we consider the average number of persons employed, both sexes, we find that All Industries and the nine industries in the aggregate, show nearly the same rate of increase, namely, 1.80 and 1.15 per cent, respectively. All the leading industries except Carpetings and Leather show an increase in 1898 as compared with 1897, the largest percentage being found in Boots and Shoes, in which 50,055 persons, on an average, were employed in the 644 establishments making return in 1897 and 51,897 persons in 1898, an increase of 3.68 per cent.

From pages 30 and 31 the following analysis table is drawn, relating to the number of persons employed at periods of employment of the smallest number :

INDUSTRIES.	Number of Estab- lishments Con- sidered	SMALLEST NUMBER OF PERSONS EMPLOYED: BOTH SEXES		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Number	Percent- ages
Boots and shoes, . . . . .	644	40,068	41,166	+1,108	+2.77
Carpetings, . . . . .	12	4,207	3,344	-863	-20.51
Cotton goods, . . . . .	169	71,385	69,968	-1,417	-1.99
Leather, . . . . .	95	4,514	4,361	-153	-3.39
Machines and machinery, . . . . .	359	15,085	15,438	+353	+2.34
Metals and metallic goods, . . . . .	380	10,958	10,934	-24	-0.22
Paper, . . . . .	80	7,687	7,972	+285	+3.71
Woollen goods, . . . . .	142	16,559	15,026	-1,533	-9.26
Worsted goods, . . . . .	35	11,744	10,025	-1,719	-14.64
Nine industries, . . . . .	1,916	182,197	178,234	-3,963	-2.18
Other industries, . . . . .	2,785	90,007	93,613	+3,606	+4.01
All industries, . . . . .	4,701	272,204	271,847	-357	-0.13

The final line of the table indicates that 272,204 persons were employed at the periods of employment of the smallest number in 1897, and 271,847 persons at the corresponding periods in 1898, a decrease of 357 persons, or 0.13 per cent. With the exceptions of Boots and Shoes, Machines and Machinery, and Paper a decrease is shown in each of the nine leading industries, the highest percentage of decrease (20.51) being found in Carpetings.

The table which follows is drawn from the presentation on pages 32 and 33, and shows the number of persons employed at the periods of employment of the largest number :

INDUSTRIES.	Number of Estab- lishments Con- sidered	GREATEST NUMBER OF PERSONS EMPLOYED: BOTH SEXES		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Number	Percent- ages
Boots and shoes, . . . . .	644	59,756	62,242	+2,486	+4.16
Carpetings, . . . . .	12	4,943	4,879	-64	-1.29
Cotton goods, . . . . .	169	87,283	88,134	+851	+0.97
Leather, . . . . .	95	6,685	6,507	-178	-2.66
Machines and machinery, . . . . .	359	21,728	21,634	-94	-0.43
Metals and metallic goods, . . . . .	380	15,822	16,306	+484	+3.06
Paper, . . . . .	80	9,070	9,301	+231	+2.55
Woollen goods, . . . . .	142	21,576	22,244	+668	+3.10
Worsted goods, . . . . .	35	14,130	14,791	+661	+4.68
Nine industries, . . . . .	1,916	240,993	246,038	+5,045	+2.09
Other industries, . . . . .	2,785	136,406	140,345	+3,939	+2.95
All industries, . . . . .	4,701	377,399	386,383	+8,984	+2.38

We note from the above table that, in the 4,701 establishments considered in All Industries, 377,399 persons were employed in 1897 at the periods of employment of the greatest number, and at the corresponding periods in 1898, 386,383 persons were employed, an increase of 2.38 per cent. This percentage of increase was practically the same in the nine industries in the aggregate, in the other industries, and in All Industries. An increase is also shown in each of the nine leading industries mentioned in detail, except Carpetings, Leather, and Machines and Machinery.

From the presentation on pages 34 and 35, we bring forward the range of employment and unemployment, as shown by the difference between the smallest and greatest number of persons employed, for the nine leading industries, the other industries, and All Industries in the aggregate :

INDUSTRIES.	Number of Estab- lishments Con- sidered	EXCESS OF GREATEST OVER SMALLEST NUMBER OF PERSONS EMPLOYED		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Number	Percent- ages
Boots and shoes, . . . . .	644	19,698	21,076	+1,378	+7.00
Carpetings, . . . . .	12	736	1,535	+799	+108.56
Cotton goods, . . . . .	169	15,898	18,166	+2,268	+14.27
Leather, . . . . .	95	2,171	2,146	-25	-1.15
Machines and machinery, . . . .	359	6,643	6,196	-447	-6.73
Metals and metallic goods, . . .	380	4,364	5,372	+508	+10.44
Paper, . . . . .	80	1,383	1,329	-54	-3.90
Woollen goods, . . . . .	142	5,017	7,218	+2,201	+43.87
Worsted goods, . . . . .	35	2,386	4,766	+2,380	+99.75
Nine industries, . . . . .	1,916	58,796	67,804	+9,008	+15.32
Other industries, . . . . .	2,785	46,399	46,732	+333	+0.72
All industries, . . . . .	4,701	105,195	114,536	+9,341	+8.88

From the final line in the above table it is at once apparent that more persons were out of employment at some time during the year 1898 than during 1897, the difference being 9,341, or 8.88 per cent. This is especially apparent in Carpetings, the percentage being 108.56. Referring to the preceding analysis tables we find, for this industry, a decrease of 9.09 per cent in average number of persons employed (page 171), a decrease of 20.51 per cent in the smallest number of persons employed (page 172), and a decrease of 1.29 per cent in greatest number of persons employed (page 172) ; from each

of these points it will be seen that employment in 1898 did not reach the level of 1897, and this fact is borne out by all the other presentations for this industry, a decrease of 2.98 per cent being shown in capital invested (page 14), a decrease of 6.67 per cent in value of stock used (page 18), a decrease of 5.46 per cent in value of goods made (page 22), a decrease of 10.80 per cent in wages paid (page 70), a decrease of 0.74 per cent in proportion of business done, and in days in operation of 8.49 per cent (pages 108 and 110, respectively).

For the purpose of exhibiting the range of employment and unemployment year by year since 1886, as shown by these annual reports, the following table of percentages is given :

COMPARATIVE YEARS.	Number of Estab- lishments Con- sidered	PERCENTAGES		
		Persons Employed at Periods of Employ- ment of Smallest Number of Persons Employed at Periods of Employment of Greatest Number	Range (Unemployed at some time During the Year)	Persons Em- ployed at Periods of Em- ployment of Greatest Number
1886, . . . . .	1,027	77.33	23.67	100.00
1887, . . . . .	1,027	78.57	21.43	100.00
1887, . . . . .	1,140	78.72	21.28	100.00
1888, . . . . .	1,140	77.18	22.82	100.00
1888, . . . . .	1,364	76.64	23.36	100.00
1889, . . . . .	1,364	79.52	20.48	100.00
1889, . . . . .	3,041	76.67	23.33	100.00
1890, . . . . .	3,041	78.05	21.95	100.00
1890, . . . . .	3,745	77.91	22.09	100.00
1891, . . . . .	3,745	78.50	21.50	100.00
1891, . . . . .	4,473	77.52	22.48	100.00
1892, . . . . .	4,473	76.90	23.10	100.00
1892, . . . . .	4,397	77.66	22.34	100.00
1893, . . . . .	4,397	64.38	35.62	100.00
1893, . . . . .	4,093	65.17	34.83	100.00
1894, . . . . .	4,093	66.55	33.45	100.00
1894, . . . . .	3,629	67.11	32.89	100.00
1895, . . . . .	3,629	74.40	25.60	100.00
1895, . . . . .	4,609	73.53	26.47	100.00
1896, . . . . .	4,609	66.52	33.48	100.00
1896, . . . . .	4,695	67.32	32.68	100.00
1897, . . . . .	4,695	71.74	28.26	100.00
1897, . . . . .	4,701	72.13	27.87	100.00
1898, . . . . .	4,701	70.36	29.64	100.00

If the maximum number were continuously employed, the percentage of persons employed throughout the year would

stand at 100; but inasmuch as there are in every industry certain times during the year when the number of persons employed is affected by temporary or prolonged shutdowns due to dull trade, accidents, or other causes, and other periods during which, owing to increase of orders, etc., a larger number of persons is employed, the difference between the number of persons employed at these two periods may be represented by a percentage which indicates the number of persons unemployed at some time during the year, the duration of unemployment, of course, not being determinable. This percentage is shown in the third column of the table. It will be noted that in the comparison for 1886-1887 less than one-quarter of the persons employed at the periods of employment of the greatest number were out of employment at some time during the year; the proportion of unemployment remained practically the same until 1892-1893, when in the latter year it slightly exceeded one-third, remaining at this figure until 1894-1895, in which latter year the range was again practically one-quarter; and since 1896 a gradual improvement will be noted.

To indicate more fully the range of unemployment, as shown by percentages, the following table for All Industries is presented, the figures upon which the percentages are based being found in the presentation on page 67 :

MONTHS.	PERCENTAGES OF EMPLOYMENT DURING THE MONTHS SPECIFIED		PERCENTAGES OF UNEMPLOYMENT DURING THE MONTHS SPECIFIED	
	1897	1898	1897	1898
January, . . . . .	96.45	97.77	3.55	2.23
February, . . . . .	96.87	97.64	3.13	2.36
March, . . . . .	98.05	99.49	1.95	0.51
April, . . . . .	99.50	99.39	0.50	0.61
May, . . . . .	99.55	97.13	0.45	2.87
June, . . . . .	97.02	97.09	2.98	2.91
July, . . . . .	93.25	95.74	6.75	4.26
August, . . . . .	92.63	96.29	7.37	3.71
September, . . . . .	97.97	97.23	2.03	2.77
October, . . . . .	100.00	99.84	-	0.16
November, . . . . .	99.98	99.64	0.07	0.36
December, . . . . .	99.38	100.00	0.62	-

The number of persons employed in October, 1897 (this being the month of employment of greatest number [334,684] in that year), is considered 100 per cent; and the number



of persons employed in December, 1898 (this being the month in which the greatest number [338,734] was employed in that year), is also considered 100 per cent. The percentages of unemployment during the other months are obtained by finding the difference between the percentages of employment appearing each month and 100 per cent. For example, the smallest number of persons employed in 1897 (310,018) is found in the month of August; the number employed in the month of October, as has been explained, constituted 100 per cent; the number employed in the month of August is represented by 92.63 per cent, while the percentage of unemployment is the difference between 92.63 and 100, or 7.37 per cent. Again, the smallest number of persons employed in any single month in 1898 (324,318) is found in July, the percentage indicating the number at work being 95.74; the difference between this and 100, namely, 4.26, indicates the percentage of unemployment during that month. The reader may find it interesting to make similar comparisons for the industries in detail and may compute the percentages of employment and unemployment for any industry from the figures in the presentation on pages 36 to 67.

These percentages based upon employment month by month plainly show that while many persons were out of employment at some time during the year, nevertheless, employment month by month in the different industries was comparatively uniform. This is, perhaps, brought out more fully in the following table for All Industries :

MONTHS.	AGGREGATE NUMBER OF PERSONS EMPLOYED IN EACH SPECIFIED MONTH		AVERAGE NUMBER OF PERSONS EMPLOYED IN EACH ESTABLISHMENT IN EACH SPECIFIED MONTH	
	1897	1898	1897	1898
January, . . . . .	322,787	331,176	69	70
February, . . . . .	324,205	330,743	69	70
March, . . . . .	328,162	337,023	70	72
April, . . . . .	333,002	336,672	71	72
May, . . . . .	333,179	329,019	71	70
June, . . . . .	324,696	328,863	69	70
July, . . . . .	312,089	324,318	66	69
August, . . . . .	310,018	326,154	66	69
September, . . . . .	327,900	329,357	70	70
October, . . . . .	334,684	338,201	71	72
November, . . . . .	334,447	337,527	71	72
December, . . . . .	332,694	338,734	71	72

No large variation in the average number of persons employed month by month is shown in the preceding table, the largest variation in number of persons per establishment being but five in 1897 and three in 1898. The months of July and August show the smallest aggregate numbers of persons employed in each year and also the lowest average, 66 per establishment in 1897 and 69 in 1898.

### WAGES PAID: BY INDUSTRIES.

The statistical presentations relating to wages will be found on pages 69 to 106. The first presentation is devoted to the total amount paid in wages in each industry for the years 1897 and 1898, pages 70 and 71; the second, to the average yearly earnings, pages 72 and 73; and the third to classified weekly earnings, pages 74 to 105. It should be borne in mind that wage earners only are considered in these presentations, no account being made of persons to whom salaries are paid, such as clerks, bookkeepers, salesmen, officers, etc.

### TOTAL WAGES PAID DURING THE YEAR.

The total amount paid in wages in All Industries, during the year 1897, as shown in the presentation on pages 70 and 71, was \$137,986,438, and the total amount paid in 1898 was \$140,212,103, an increase in the latter year of \$2,225,665, or 1.61 per cent. In the following table is reproduced the total wages paid in the nine principal industries, the other industries, and All Industries:

INDUSTRIES.	Number of Establishments Considered	TOTAL AMOUNT PAID IN WAGES DURING THE YEAR		INCREASE (+) OR DECREASE (-) IN 1898	
		1897	1898	Amounts	Percentages
Boots and shoes, . . . .	644	\$23,560,417	\$23,904,714	+\$344,297	+1.46
Carpetings, . . . .	12	1,605,379	1,431,921	-173,458	-10.80
Cotton goods, . . . .	169	27,193,335	26,294,240	-899,095	-3.31
Leather, . . . .	95	2,679,496	2,640,868	-38,628	-1.44
Machines and machinery, .	359	9,505,410	10,068,181	+\$562,771	+5.92
Metals and metallic goods, .	380	6,634,101	6,842,531	+208,430	+3.14
Paper, . . . .	80	3,493,786	3,719,611	+225,825	+6.46
Woollen goods, . . . .	142	7,052,842	7,205,613	+152,771	+2.17
Worsted goods, . . . .	35	4,655,439	4,789,876	+134,437	+2.89
Nine industries, . . . .	1,916	86,380,205	86,897,555	+\$517,350	+0.60
Other industries, . . . .	2,785	51,606,233	53,314,548	+1,708,315	+3.31
All industries, . . . .	4,701	137,986,438	140,212,103	+2,225,665	+1.61

The highest percentage of increase, 6.46, is found in Paper; the next highest, 5.92, in Machines and Machinery, and the next, 3.14, in Metals and Metallic Goods. Following these industries come Worsted Goods, with an increase of 2.89 per cent; Woollen Goods, 2.17 per cent; and Boots and Shoes, 1.46 per cent. Decreases are shown for Carpetings, amounting to 10.80 per cent; Cotton Goods, 3.31 per cent; and Leather, 1.44 per cent. The percentage of increase in the nine industries in the aggregate is 0.60, and in industries other than these nine the increase, in the aggregate, is 3.31 per cent.

#### AVERAGE YEARLY EARNINGS.

The average yearly earnings as shown on pages 72 and 73 are obtained by dividing the total amount paid in wages each year by the figures representing the average number of persons employed, without regard to sex, age, or degree of skill. In 1897, in All Industries, the average yearly earnings were \$422.26 and in 1898, \$421.48, a loss of seventy-eight cents per individual, on an average, or, 0.18 per cent. The facts for the leading industries are brought forward in the following table:

INDUSTRIES.	Number of Establishments Considered	AVERAGE YEARLY EARNINGS		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Amounts	Percentages
Boots and shoes, . . . . .	644	\$470.69	\$460.62	—\$10.07	—2.14
Carpetings, . . . . .	12	347.26	340.69	—6.57	—1.89
Cotton goods, . . . . .	169	334.91	323.08	—11.83	—3.53
Leather, . . . . .	95	478.74	483.23	+4.49	+0.94
Machines and machinery, . . . . .	359	520.53	539.62	+19.09	+3.67
Metals and metallic goods, . . . . .	380	493.46	508.74	+15.28	+3.10
Paper, . . . . .	80	410.55	422.83	+12.28	+2.99
Woollen goods, . . . . .	142	365.72	370.70	+4.98	+1.36
Worsted goods, . . . . .	35	358.80	365.44	+6.64	+1.85
Nine industries, . . . . .	1,916	403.75	401.56	—2.19	—0.54
Other industries, . . . . .	2,785	457.37	458.54	+1.17	+0.26
All industries, . . . . .	4,701	422.26	421.48	—0.78	—0.18

The average amount earned by each employé in Machines and Machinery was \$520.53 in 1897 and \$539.62 in 1898; an increase of \$19.09 per employé, or 3.67 per cent. Metals and Metallic Goods follows with an increase of \$15.28, or 3.10 per cent; Paper, \$12.28, or 2.99 per cent; Worsted Goods, \$6.64,

or 1.85 per cent; Woollen Goods, \$4.98, or 1.36 per cent; and Leather, \$4.49, or 0.94 per cent. Three of the nine selected industries, namely, Boots and Shoes, Carpetings, and Cotton Goods, show decreases, the amounts being, respectively, \$10.07, \$6.57, and \$11.83. For the nine leading industries in the aggregate, a decrease is shown per employé of \$2.19, or 0.54 per cent, and in the other industries in the aggregate, an increase per employé is found of \$1.17, or 0.26 per cent.

The increase or decrease in average yearly earnings (not *wages*, as has often erroneously been stated) has but slight significance when considered by itself. So many factors each affecting to a greater or less degree the annual amount earned by each employé must be considered, that statements as to whether wages have been increased or reduced should be carefully guarded. The questions of sex, age, degree of skill, and duration of employment all have their effect on the average yearly earnings. In the table which follows, so far as it may be done statistically, some of the factors are taken into consideration; the different proportions of the sexes employed during 1898 are shown, and the proportions of hour, day, and piece hands, the latter percentages being derived from the Decennial Census of 1895.

Average Yearly Earnings 1898	INDUSTRIES.	PERCENTAGES				
		AVERAGE NUM- BER OF PERSONS EMPLOYED IN 1898		HOUR, DAY, AND PIECE HANDS: BOTH SEXES, 1895		
		Males	Females	Hour Hands	Day Hands	Piece Hands
\$801.77	Liquors (malt),* . . . . .	100.00	-	0.43	99.45	0.12
704.62	Liquors (distilled), * . . . .	100.00	-	0.43	99.45	0.12
692.12	Models, lasts, and patterns, . . . .	99.80	0.20	20.31	48.00	31.69
625.82	Shipbuilding, . . . . .	100.00	-	30.61	68.88	0.51
607.35	Fine arts and taxidermy, . . . . .	94.12	5.88	-	100.00	-
602.57	Burial cases, caskets, coffins, etc., . . . .	87.71	12.29	9.05	76.38	14.57
601.75	Tobacco, snuff, and cigars, . . . . .	71.94	28.06	1.20	19.71	79.09
600.30	Chemical preparations (compounded), . . . .	96.96	3.04	1.07	97.44	1.49
598.42	Carriages and wagons, . . . . .	99.37	0.63	33.01	42.60	24.39
594.99	Cooking, lighting, and heating apparatus, . . . .	99.56	0.44	6.76	65.76	27.48
584.01	Building materials, . . . . .	99.84	0.16	22.70	76.52	0.78
577.76	Photographs and photographic materials, . . . .	57.98	42.02	29.14	59.33	11.53
577.50	Liquors (bottled) and carbonated beverages, . . . . .	98.60	1.40	2.15	97.68	0.17
573.92	Railroad construction and equipment, . . . . .	100.00	-	30.50	66.32	3.18

\* Presented in 1895 as Liquors: Malt, Distilled, and Fermented.

Average Yearly Earnings 1895	INDUSTRIES.	PERCENTAGES					
		AVERAGE NUMBER OF PERSONS EMPLOYED IN 1895		HOUR, DAY, AND PIECE HANDS: BOTH SEXES, 1895			
		Males	Females	Hour Hands	Day Hands	Piece Hands	
\$570.49	Musical instruments and materials, . . .	94.07	5.93	18.67	37.88	43.95	
557.43	Bicycles, tricycles, etc.,* . . . . .	96.99	3.01	33.01	42.60	24.39	
557.39	Paints, colors, and crude chemicals, . .	92.47	7.53	1.65	95.39	2.96	
549.69	Emery and sand paper and cloth, etc., .	100.00	-	40.98	55.19	3.83	
540.90	Oils and illuminating fluids, . . . . .	89.22	10.78	1.80	84.43	13.77	
539.62	Machines and machinery, . . . . .	98.46	1.54	46.79	44.31	8.90	
537.62	Fertilizers, . . . . .	100.00	-	-	99.54	0.46	
536.61	Artisans' tools, . . . . .	96.91	3.09	25.57	46.14	28.29	
532.65	Glass, . . . . .	94.53	5.47	14.31	70.43	15.26	
529.93	Saddlery and harness, . . . . .	94.02	5.98	7.46	55.60	36.94	
528.94	Awnings, sails, tents, etc., . . . . .	65.80	34.20	58.10	38.33	3.57	
527.88	Ink, mucilage, and paste, . . . . .	60.29	39.71	-	69.23	30.77	
526.18	Electrical apparatus and appliances, . .	83.49	16.51	31.99	20.56	47.45	
518.89	Sporting and athletic goods, . . . . .	83.13	16.87	62.17	17.46	20.37	
509.94	Printing, publishing, and bookbinding, .	62.49	37.51	17.88	63.64	18.48	
508.74	Metals and metallic goods, . . . . .	89.90	10.10	31.53	44.98	23.49	
501.54	Stone, . . . . .	100.00	-	34.45	56.21	9.34	
499.81	Clocks and watches,† . . . . .	44.37	55.63	60.99	11.13	27.88	
496.56	Trunks and valises, . . . . .	91.78	8.22	4.93	74.65	20.42	
492.08	Arms and ammunition, . . . . .	91.53	8.47	56.84	21.19	21.97	
492.02	Electroplating, . . . . .	95.28	4.72	10.37	80.37	9.26	
487.93	Tallow, candles, soap, and grease, . .	89.86	10.14	9.82	88.40	1.78	
484.19	Agricultural implements, . . . . .	100.00	-	14.33	50.22	35.45	
483.23	Leather,‡ . . . . .	99.54	0.46	9.51	72.54	17.95	
479.84	Furniture, . . . . .	88.73	11.27	14.40	48.85	36.75	
479.55	Jewelry,† . . . . .	65.85	34.15	60.99	11.13	27.88	
466.11	Straw and palm leaf goods, . . . . .	37.48	62.52	14.77	18.37	66.86	
460.62	Boots and shoes, . . . . .	68.69	31.31	16.19	19.45	64.36	
460.56	Wooden goods, . . . . .	95.37	4.63	25.79	63.19	11.02	
457.37	Lumber, . . . . .	98.98	1.02	10.43	82.55	7.02	
456.96	Dyestuffs, . . . . .	64.12	35.88	3.86	93.24	2.90	
454.92	Glue, isinglass, and starch, . . . . .	89.66	10.34	-	93.85	6.15	
448.85	Hose: rubber, linen, etc., . . . . .	81.71	18.29	90.99	2.93	6.08	
443.95	Food preparations, . . . . .	72.57	27.43	8.38	85.97	5.65	
442.40	Earthen, plaster, and stone ware, . . .	81.95	18.05	1.18	68.11	30.71	
441.31	Print works, dye works, and bleacheries,	81.46	18.54	61.37	29.33	9.30	
439.99	Polishes and dressing, . . . . .	45.31	54.69	4.59	75.36	20.05	
439.09	Scientific instruments and appliances, .	82.00	18.00	10.18	67.75	22.07	
438.05	Cement, kaolin, lime, and plaster, . .	100.00	-	24.14	71.92	3.94	
436.51	Leather goods,§ . . . . .	72.47	27.53	9.51	72.54	17.95	
433.36	Perfumes, toilet articles, etc., . . . .	45.45	54.55	-	39.13	10.87	
428.67	Boxes, barrels, kegs, etc.,   . . . . .	82.99	17.01	14.09	47.17	38.74	
428.16	Rubber and elastic goods, . . . . .	54.42	45.58	5.09	40.14	54.77	
422.83	Paper,¶ . . . . .	60.46	39.54	11.16	63.25	25.59	
417.66	Drugs and medicines, . . . . .	48.98	51.02	7.55	77.43	15.02	

\* Included in Carriages and Wagons in 1895.

† Presented in 1895 as Clocks, Watches, and Jewelry. ‡ Included Leather Goods in 1895.

§ Presented with Leather in 1895.

|| In 1895, boxes included under Boxes (Paper and Wooden) and barrels and kegs under Wooden Goods.

¶ Presented in 1895 as Paper and Paper Goods.

Average Yearly Earnings 1898	INDUSTRIES.	PERCENTAGES					
		AVERAGE NUM- BER OF PERSONS EMPLOYED IN 1898		HOUR, DAY, AND PIECE HANDS: BOTH SEXES, 1895			
		Males	Females	Hour Hands	Day Hands	Piece Hands	
\$416.85	Whips, lashes, and stocks, . . .	70.94	29.06	17.16	61.52	21.32	
408.72	Brick, tiles, and sewer pipe, . . .	99.84	0.16	2.99	93.40	3.61	
406.92	Toys and games (children's), . . .	82.50	17.50	24.65	47.35	28.00	
400.41	Fireworks and matches, . . .	67.78	32.22	0.72	73.19	26.09	
397.19	Ivory, bone, shell, and horn goods, etc., .	83.39	16.61	46.50	37.24	16.26	
376.30	Clothing, . . . . .	29.75	70.25	2.92	44.80	52.28	
370.70	Woollen goods, . . . . .	63.87	36.13	35.87	24.93	39.20	
368.77	Paper goods,* . . . . .	43.85	56.15	11.16	63.25	25.59	
365.44	Worsted goods, . . . . .	53.74	46.26	66.16	3.45	30.39	
357.87	Fancy articles, etc., . . . . .	37.75	62.25	14.60	46.93	38.47	
352.89	Silk and silk goods, . . . . .	33.53	66.47	54.29	2.12	43.59	
351.08	Brooms, brushes, and mops, . . . . .	50.76	49.24	6.71	54.02	39.27	
345.87	Boxes (paper),† . . . . .	28.49	71.51	14.09	47.17	38.74	
345.24	Crayons, pencils, crucibles, etc., . . .	43.55	56.45	-	54.55	45.45	
340.69	Carpetings, . . . . .	50.61	49.39	46.15	9.71	44.14	
335.22	Hair work (animal and human), . . .	48.08	51.92	6.73	71.30	21.97	
329.86	Cordage and twine, . . . . .	63.93	36.07	20.96	66.24	12.80	
323.08	Cotton goods, . . . . .	50.79	49.21	38.85	8.45	52.70	
320.77	Buttons and dress trimmings, . . . .	36.31	63.69	28.87	26.84	44.29	
301.81	Hosiery and knit goods, . . . . .	28.60	71.40	20.20	7.33	72.47	
295.03	Flax, hemp, and jute goods, . . . . .	41.39	58.61	12.64	32.70	54.66	
\$421.48	ALL INDUSTRIES, . . . . .	66.00	34.00	26.73	38.76	34.51	

\* Presented in 1895 as Paper and Paper Goods.

† Presented in 1895 as Boxes (Paper and Wooden).

The highest average yearly earnings in 1898 are found in Liquors (Malt), the amount earned by each employé being, on an average, \$801.77. The lowest average yearly earnings are found in Flax, Hemp, and Jute Goods, the average amount earned per employé being \$295.03. In Liquors (Malt) it will be noted that all the persons employed are males, and according to the Decennial Census of 1895, the percentage of day hands in all of the establishments included in the industry, then comprising Liquors: Malt, Distilled, and Fermented, was 99.45. As regards Flax, Hemp, and Jute Goods, 58.61 per cent of the employés were females and 54.66 per cent piece hands. According to the Census of 1885, 96.59 per cent of the employés in Liquors: Malt, Distilled, and Fermented were over 21 years of age, and 43.76 per cent of the employés in Flax, Hemp, and Jute Goods were under 21 years of age, showing that the questions of age and skill enter largely into the matter of average annual earnings.

## CLASSIFIED WEEKLY EARNINGS.

In the absence of individual returns, actual wage conditions may be more accurately ascertained by a comparison of the fluctuations in amounts paid weekly to male and female employes. Of course, the question of age affects to a greater or less degree these returns, but perhaps not sufficiently to affect the deductions when confined to the question of sex. On pages 74 to 105 will be found a presentation for each industry which shows the number of persons of each sex receiving from under \$5 a week to \$20 a week and over, for the years 1897 and 1898. In the following table, we have reduced the numbers shown for All Industries to percentages :

CLASSIFICATION OF WEEKLY EARNINGS.	PERCENTAGES			
	1897		1898	
	Males	Females	Males	Females
Under \$5, . . . . .	38.90	61.10	38.60	61.40
\$5 but under \$6, . . . . .	37.44	62.56	39.33	60.67
\$6 but under \$7, . . . . .	47.72	52.28	48.32	51.68
\$7 but under \$8, . . . . .	57.53	42.47	58.21	41.79
\$8 but under \$9, . . . . .	64.92	35.08	67.22	32.78
\$9 but under \$10, . . . . .	81.47	18.53	82.35	17.65
\$10 but under \$12, . . . . .	86.83	13.17	86.69	13.31
\$12 but under \$15, . . . . .	94.01	5.99	93.30	6.70
\$15 but under \$20, . . . . .	97.41	2.59	97.65	2.35
\$20 and over, . . . . .	98.64	1.36	98.86	1.14
TOTALS, . . . . .	66.40	33.60	66.31	33.69

It will be readily seen from this table that females in both years were paid lower weekly wages than males, and, in comparing the two years it is found that the number of females receiving a specified wage, exhibits an increase in 1898 as compared with 1897 in but three classes, namely, Under \$5, \$10 but under \$12, and \$12 but under \$15, the percentages of increase are small, however, being but 0.30, 0.14, and 0.71, respectively. The males show an increase in all the classes except the three just mentioned.

The fluctuations in the different wage classes are, perhaps, more clearly brought out in the following analysis table for All Industries :

CLASSIFICATION OF WEEKLY EARNINGS.	PERCENTAGES					
	1897			1898		
	Males	Females	Both Sexes	Males	Females	Both Sexes
Under \$5, . . . .	8.52	26.45	14.54	9.12	28.57	15.67
\$5 but under \$6, . . . .	5.71	18.88	10.14	6.18	18.78	10.42
\$6 but under \$7, . . . .	8.64	18.70	12.02	8.62	18.16	11.84
\$7 but under \$8, . . . .	9.37	13.67	10.81	9.55	13.49	10.88
\$8 but under \$9, . . . .	9.12	9.74	9.33	9.10	8.74	8.98
\$9 but under \$10, . . . .	12.18	5.48	9.93	12.22	5.15	9.84
\$10 but under \$12, . . . .	14.20	4.26	10.86	14.01	4.24	10.72
\$12 but under \$15, . . . .	16.60	2.09	11.73	15.78	2.23	11.22
\$15 but under \$20, . . . .	11.88	0.63	8.10	11.78	0.56	7.96
\$20 and over, . . . .	3.78	0.10	2.54	3.69	0.08	2.47
TOTALS, . . . .	100.00	100.00	100.00	100.00	100.00	100.00

The total number of males, the total number of females, and the total number of employes of both sexes are considered, severally, as representing 100 per cent, and the number of persons in each wage class is represented by the percentage given. In the wage class \$8 but under \$9 the proportion of the sexes is approximately the same in each year. The number of female employes, as expressed in percentages, shows an increase in 1898 as compared with 1897, in only two classes, namely, Under \$5, and \$12 but under \$15, and decreases in each of the other classes.

## PROPORTION OF BUSINESS DONE AND DAYS IN OPERATION: BY INDUSTRIES.

The statistical presentations relating to this subject will be found on pages 107 to 112. The first is devoted to proportion of business done, pages 108 and 109, and the second to the average number of days in operation, pages 110 and 111.

### PROPORTION OF BUSINESS DONE.

The greatest amount of goods which can be turned out in an establishment without increasing present facilities is considered 100 per cent. If an establishment turned out goods equivalent to three-quarters of its greatest capacity, the proportion of business done would be 75 per cent, while if only one-half of a possible output was reached it would be con-



sidered as 50 per cent. It will be seen by reference to the final line of the presentation on pages 108 and 109 that in 1897 the average proportion of business done for each of the 4,701 establishments was 60.60 per cent, and in 1898, 61.19 per cent. No single industry in 1898 shows production carried to full capacity, 100 per cent; the nearest approach to it is found, however, in Cotton Waste, the percentage being 86.88. One industry, Cordage and Twine, exhibits no change in average proportion of business done in 1898 as compared with 1897. In the following industries, less than one-half of the possible output in 1898 is shown :

Awnings, Sails, Tents, etc.  
Bicycles, Tricycles, etc.  
Buttons and Dress Trimmings.  
Liquors (Distilled).  
Perfumes, Toilet Articles, etc.

Shipbuilding.  
Sporting and Athletic Goods.  
Stone (Quarried).  
Trunks and Valises.

Production equalled, on an average, more than three-quarters of the greatest capacity in

Burial Cases, Caskets, Coffins, etc.	Silk and Silk Goods.
Cotton Goods (in the aggregate).	Whips, Lashes, and Stocks.
Cotton Goods (Woven).	Woollen Goods (in the aggregate).
Cotton Yarn and Thread.	Woollen Goods (Woven Goods and Yarn).
Cotton Waste.	Worsted Goods.
Crayons, Pencils, Crucibles, etc.	
Paper.	

The following table reproduces the average proportion of business done for the nine leading industries :

INDUSTRIES.	Number of Establishments Considered	AVERAGE PRO- PORTION OF BUSINESS DONE		INCREASE (+) OR DECREASE (—) IN 1898	
		1897	1898	Proportion	Percent- ages
Boots and shoes, . . . . .	644	61.35	59.88	—1.47	—2.40
Carpetings, . . . . .	12	67.33	66.83	—0.50	—0.74
Cotton goods, . . . . .	169	81.83	84.42	+2.59	+3.17
Leather, . . . . .	95	62.97	61.43	—1.54	—2.45
Machines and machinery, . . . . .	359	55.11	57.77	+2.66	+4.83
Metals and metallic goods, . . . . .	380	57.65	59.14	+1.49	+2.58
Paper, . . . . .	80	75.70	81.23	+5.53	+7.31
Woollen goods, . . . . .	142	78.32	75.77	—2.55	—3.26
Worsted goods, . . . . .	35	82.63	76.74	—5.89	—7.13
Nine industries, . . . . .	1,916	63.62	64.00	+0.38	+0.60
Other industries, . . . . .	2,785	58.52	59.25	+0.73	+1.25
All industries, . . . . .	4,701	60.60	61.19	+0.59	+0.97

Of the leading industries, Cotton Goods and Paper are the only two which in 1898 approached full capacity, the average proportion of business done being over 80 per cent in both. In the other principal industries, production varied from 57.77 per cent in Machines and Machinery to 76.74 per cent in Wors-ted Goods. In the nine industries in the aggregate, production approached nearly two-thirds of the greatest capacity, and in the other industries it was slightly below six-tenths of the greatest capacity.

#### DAYS IN OPERATION.

The average number of days in operation for 1897 and 1898 is shown on pages 110 and 111. The average number of days in operation is based upon the average number of persons employed, the number of days reported by each establishment being multiplied by the figures representing the average number of persons employed therein, and the sum of these multiplications for all the establishments divided by the aggregate average number of persons, an average for each industry and for All Industries being thus obtained.

The average number of days in operation in All Industries in 1897 was 284.05, and in 1898, 286.28, an increase of 2.23 days, or 0.79 per cent. In the following industries an increase greater than the increase for All Industries appears :

Agricultural Implements.  
Arms and Ammunition.  
Artisans' Tools.  
Boxes, Barrels, Kegs, etc.  
Boxes (Paper).  
Brooms, Brushes, and Mops.  
Carpetings (other than textile).  
Clocks and Watches.  
Clothing.  
Cotton Goods (in the aggregate).  
Cotton Goods (Woven).  
Cotton Yarn and Thread.  
Cotton Waste.  
Crayons, Pencils, Crucibles, etc.  
Earthen, Plaster, and Stone Ware.  
Emery and Sand Paper and Cloth,  
etc.  
Fancy Articles, etc.  
Fertilizers.  
Fireworks and Matches.  
Hair Work (Animal and Human).

Hosiery and Knit Goods.  
Ivory, Bone, Shell, and Horn Goods,  
etc.  
Jewelry.  
Leather Goods.  
Machines and Machinery.  
Metals and Metallic Goods.  
Models, Lasts, and Patterns.  
Musical Instruments and Materials.  
Paints, Colors, and Crude Chemicals.  
Paper.  
Paper Goods.  
Railroad Construction and Equip-  
ment.  
Rubber and Elastic Goods.  
Scientific Instruments and Appli-  
ances.  
Shipbuilding.  
Silk and Silk Goods.  
Trunks and Valises.  
Whips, Lashes, and Stocks.

The total number of working days in 1897 and 1898, exclusive of 52 Sundays and seven holidays, was 306. On an average there were, therefore, 25.50 working days in each month. The following industries show an increase of more than one week, on an average, in 1898 as compared with 1897 :

Agricultural Implements.	Ivory, Bone, Shell, and Horn Goods, etc.
Arms and Ammunition.	Leather Goods.
Brooms, Brushes, and Mops.	Machines and Machinery.
Carpetings (other than textile).	Musical Instruments and Materials.
Cotton Goods (in the aggregate).	Paints, Colors, and Crude Chemicals.
Cotton Yarn and Thread.	Paper.
Cotton Waste.	Railroad Construction and Equipment.
Earthen, Plaster, and Stone Ware.	Rubber and Elastic Goods.
Fertilizers.	
Hair Work (Animal and Human).	
Hosiery and Knit Goods.	

One industry, namely, Hair Work (Animal and Human) shows a gain of more than one month in average number of days in operation, the increase being 41.82 days.

The following industries show a decrease of one week or more in 1898 as compared with 1897 :

Brick, Tiles, and Sewer Pipe.	Lumber.
Carpetings (in the aggregate).	Perfumes, Toilet Articles, etc.
Carpetings (Textile).	Stone (Quarried).
Cement, Kaolin, Lime, and Plaster.	Tallow, Candles, Soap, and Grease.
Electroplating.	Woollen Shoddy, Waste, etc.
Glass.	Worsted Goods.
Liquors (Distilled).	

Three of the above industries show a decrease of more than one month, on an average ; they are, Electroplating, 29.56 days ; Woollen Shoddy, Waste, etc., 33.80 days, and Worsted Goods, 27.08 days.

The average running time in 1898 exceeded 300 days in the following industries :

Burial Cases, Caskets, Coffins, etc.	Liquors (Malt).
Cotton Yarn and Thread.	Oils and Illuminating Fluids.
Cotton Waste.	Paper Goods.
Crayons, Pencils, Crucibles, etc.	Photographs and Photographic Materials.
Fertilizers.	Polishes and Dressing.
Fine Arts and Taxidermy.	Scientific Instruments and Appliances.
Ink, Mucilage, and Paste.	
Leather Goods.	
Liquors (Bottled) and Carbonated Beverages.	

The average number of days in operation for the nine leading industries is shown in the following table :

INDUSTRIES.	Number of Estab- lishments Con- sidered	AVERAGE NUMBER OF DAYS IN OPERATION		INCREASE (+) OR DECREASE (-) IN 1998	
		1997	1998	Days	Percent- ages
Boots and shoes, . . . . .	644	285.88	286.80	+0.92	+0.32
Carpetings, . . . . .	12	243.78	223.08	-20.70	-8.49
Cotton goods, . . . . .	169	236.50	293.08	+6.58	+2.80
Leather, . . . . .	95	291.83	290.44	-1.39	-0.48
Machines and machinery, . . . . .	359	275.71	288.71	+13.00	+4.72
Metals and metallic goods, . . . . .	380	278.17	280.79	+2.62	+0.94
Paper, . . . . .	80	271.18	281.95	+10.77	+3.97
Woollen goods, . . . . .	142	285.45	279.58	-5.87	-2.06
Worsted goods, . . . . .	35	293.58	286.50	-27.08	-9.22
Nine industries, . . . . .	1,916	283.85	285.73	+1.88	+0.66
Other industries, . . . . .	2,785	284.32	287.29	+2.97	+1.04
All industries, . . . . .	4,701	284.05	286.28	+2.23	+0.79

Four of the principal industries show a decrease in average number of days in operation, namely, Carpetings, 20.70 days ; Leather, 1.39 days ; Woollen Goods, 5.87 days ; and Worsted Goods, 27.08 days. Boots and Shoes exhibits a slight increase of 0.92 days ; Metals and Metallic Goods, a slightly higher increase of 2.62 days ; Cotton Goods, an increase of over one week (6.58 days) ; Paper, 10.77 days ; and Machines and Machinery, 13 days. The nine industries in the aggregate, show an increase of about two days (1.88) and the other industries in the aggregate, an increase of nearly three days (2.97).

### SUMMARY.

When considering the question of wages, we called attention to the fact that the total amount paid out in wages, considered by itself, should not be taken as a basis for deductions concerning the rate of wages prevailing in any year or industry, and that the increase or decrease shown in average yearly earnings was not necessarily indicative of advance or decline in amount *paid* to each employé. Increase or decrease in the *rate* of wages cannot be accurately determined from the presentations in this or other reports of wages paid. All that it is possible to show at the present stage of statistical knowledge is the increase or decrease in *average yearly earnings*, and to point out that there are numerous factors by which these too

are affected. A large number of low-priced employes, employed for a short time only, will tend to decrease the *average earnings*, although the *rate* of wages may remain the same. Should the number of persons employed and the rate of wages paid remain the same in two successive years, the difference in running time would be sufficient to affect the average annual earnings. For the purpose of bringing some of these conditions before the reader, we have prepared a series of four tables in which the industries are divided into classes. The first class comprises the industries which show an increase in the average number of days in operation and in the average proportion of business done; they are as follows:

INDUSTRIES.	INCREASE (+) OR DECREASE (—) IN 1898 AS COMPARED WITH 1897 IN —				
	Average Number of Days in Operation	Average Proportion of Business Done	Average Yearly Earnings	Average Number of Persons Employed	"Range"
Agricultural implements, . . . . .	+8.51	+8.33	+17.50	+21	+9
Arms and ammunition, . . . . .	+23.84	+13.15	—19.44	+99	+418
Artisans' tools, . . . . .	+4.22	+1.05	+26.87	+131	+118
Awnings, sails, tents, etc., . . . . .	+1.29	+2.86	+37.80	+9	+37
Boot and shoe findings, . . . . .	+2.04	+2.11	+1.29	+27	+7
Boxes, barrels, kegs, etc., . . . . .	+2.38	+2.44	+10.29	+18	—86
Boxes (paper), . . . . .	+5.47	+0.51	—3.25	+43	+17
Brooms, brushes, and mops, . . . . .	+24.13	+7.31	+11.46	+46	+9
Carpetings (other than textile), . . . . .	+14.20	+3.75	+42.01	+33	+15
Clocks and watches, . . . . .	+2.81	+14.08	—4.41	+198	—84
Clothing, . . . . .	+2.33	+0.51	+4.72	+173	—474
Cotton goods (in the aggregate), . . . . .	+6.58	+2.59	—11.83	+190	+2,268
Cotton goods (woven), . . . . .	+4.52	+0.68	—14.05	—799	+2,684
Cotton yarn and thread, . . . . .	+22.06	+6.61	+4.54	+951	—418
Cotton waste, . . . . .	+7.52	+10.50	+9.59	+28	+2
Crayons, pencils, crucibles, etc., . . . . .	+2.75	+5.67	+31.18	+14	+45
Earthen, plaster, and stone ware, . . . . .	+14.17	+5.50	—17.52	+10	—16
Electrical apparatus and appliances, . . . . .	+0.11	+0.53	+56.05	+553	+341
Emery and sand paper and cloth, etc., . . . . .	+2.76	+3.00	—1.21	+99	+65
Fertilizers, . . . . .	+13.10	+2.33	+5.69	+16	+5
Hosiery and knit goods, . . . . .	+14.18	+1.79	+0.62	+649	—180
Ivory, bone, shell, and horn goods, etc., . . . . .	+7.29	+3.11	—16.70	+135	—43
Jewelry, . . . . .	+5.07	+5.95	—7.88	+658	+615
Leather goods, . . . . .	+11.23	+0.50	—23.18	+100	+38
Machines and machinery, . . . . .	+13.00	+2.66	+19.09	+397	—417
Metals and metallic goods, . . . . .	+2.62	+1.49	+15.28	+6	+508
Models, lasts, and patterns, . . . . .	+3.80	+0.65	—14.28	+15	—4
Musical instruments and materials, . . . . .	+9.11	+2.82	+13.30	+113	—173
Paints, colors, and crude chemicals, . . . . .	+15.88	+2.21	—0.72	+22	—15
Paper, . . . . .	+10.77	+5.53	+12.25	+287	—54
Polishes and dressing, . . . . .	+1.06	+2.12	+0.53	+26	+2
Rubber and elastic goods, . . . . .	+16.12	+6.43	+18.35	+412	+1
Shipbuilding, . . . . .	+4.14	+4.94	+1.97	—41	—52
Silk and silk goods, . . . . .	+3.25	+2.00	+11.67	+194	+142
Straw and palm leaf goods, . . . . .	+1.33	+3.11	+0.83	—1	—15
Toys and games (children's), . . . . .	+0.68	+4.70	—1.07	—4	—1
Whips, lashes, and stocks, . . . . .	+4.04	+6.71	+2.93	+54	+54

With the exception of the following named industries, an increase in average yearly earnings is shown together with an increase in the average number of days in operation :

Arms and Ammunition.	Ivory, Bone, Shell, and Horn Goods,
Boxes (Paper).	etc.
Clocks and Watches.	Jewelry.
Cotton Goods (in the aggregate).	Leather Goods.
Cotton Goods (Woven).	Models, Lasts, and Patterns.
Earthen, Plaster, and Stone Ware.	Paints, Colors, and Crude Chemicals.
Emery and Sand Paper and Cloth,	Toys and Games (Children's).
etc.	

An increase in the average number of persons employed is noted in each of the industries in the preceding table except the following four :

Cotton Goods (Woven).	Straw and Palm Leaf Goods.
Shipbuilding.	Toys and Games (Children's).

The range of unemployment was wider, showing that more persons were out of employment for a period of longer or shorter duration, in 1898 than in 1897 in all industries of this class except the following :

Boxes, Barrels, Kegs, etc.	Machines and Machinery.
Clocks and Watches.	Models, Lasts, and Patterns.
Clothing.	Musical Instruments and Materials.
Cotton Yarn and Thread.	Paints, Colors, and Crude Chemicals.
Earthen, Plaster, and Stone Ware.	Paper.
Hosiery and Knit Goods.	Shipbuilding.
Ivory, Bone, Shell, and Horn Goods,	Straw and Palm Leaf Goods.
etc.	Toys and Games (Children's).

We have previously called attention to the fact that the employment of females affected the average annual earnings ; in the following industries in this class, an increase in the average number of females employed is accompanied by a decrease in average yearly earnings :

Arms and Ammunition.	Jewelry.
Boxes (Paper).	Leather Goods.
Clocks and Watches.	Paints, Colors, and Crude Chemicals.
Earthen, Plaster, and Stone Ware.	etc.
Ivory, Bone, Shell, and Horn Goods,	Toys and Games (Children's).
etc.	

Of the industries in the first class, only three show a decrease in the value of goods made and work done in 1898 as

compared with 1897, namely, Clothing, Cotton Goods (Woven), and Earthen, Plaster, and Stone Ware.

Of the industries in the first class, the following exhibit an increase of more than six days in the average number of days in operation, an increase in average proportion of business done, an increase in the average amount earned per employé, an increase in the average number of persons employed, and an increase in the value of goods made and work done :

Agricultural Implements.	Hosiery and Knit Goods.
Brooms, Brushes, and Mops.	Machines and Machinery.
Carpetings (other than textile).	Musical Instruments and Materials.
Cotton Yarn and Thread.	Paper.
Cotton Waste.	Rubber and Elastic Goods.
Fertilizers.	

The second class contains those industries which show an increase in the average number of days in operation but a decrease in the average proportion of business done ; they are as follows :

INDUSTRIES.	INCREASE (+) OR DECREASE (—) IN 1898 AS COMPARED WITH 1897 IN —				
	Average Number of Days in Operation	Average Proportion of Business Done	Average Yearly Earnings	Average Number of Persons Employed	"Range"
Boots and shoes (aggregates), . . . .	+0.92	—1.47	—\$10.07	+1,842	+1,378
Boots and shoes (factory product), . .	+1.09	—0.68	—10.91	+1,913	+1,313
Burial cases, caskets, coffins, etc., . .	+1.32	—2.67	+13.38	—6	+1
Fancy articles, etc., . . . . .	+4.33	—2.37	+2.51	+16	+10
Fine arts and taxidermy, . . . . .	+0.48	—1.67	—4.19	+4	+2
Fireworks and matches, . . . . .	+4.48	—1.25	+16.64	—7	—24
Hair work (animal and human), . . . .	+41.82	—1.25	+43.28	—28	—8
Paper goods, . . . . .	+3.17	—2.85	—22.83	+355	—12
Railroad construction and equipment, .	+8.79	—7.69	—0.11	—191	+110
Scientific instruments and appliances, .	+3.42	—1.35	—7.85	+124	+41
Stone (cut and monumental), . . . . .	+0.25	—0.82	+3.73	—186	—115
Trunks and valises, . . . . .	+5.25	—3.28	—9.37	+5	—13

Five of the above industries exhibit an increase in average annual earnings ; they are

Burial Cases, Caskets, Coffins, etc.	Hair Work (Animal and Human).
Fancy Articles, etc.	Stone (Cut and Monumental).
Fireworks and Matches.	

An increase in the average number of persons employed is shown in the following industries :

Boots and Shoes (in the aggregate). Paper Goods.  
 Boots and Shoes (Factory Product). Scientific Instruments and Appliances.  
 Fancy Articles, etc.  
 Fine Arts and Taxidermy. Trunks and Valises.

The range of unemployment was narrower in

Fireworks and Matches. Stone (Cut and Monumental).  
 Hair Work (Animal and Human). Trunks and Valises.  
 Paper Goods.

An increase in the average number of females employed accompanied by a decrease in the average yearly earnings is shown for Boots and Shoes (both in the aggregate and for factory product), Paper Goods, and Scientific Instruments and Appliances.

Of the industries in the second class, four show a decrease in the value of goods made and work done; they are,

Burial Cases, Caskets, Coffins, etc. Stone (Cut and Monumental).  
 Hair Work (Animal and Human). Trunks and Valises.

The industries in the third class are those in which a decrease in the average number of days in operation is found, but a larger average proportion of business done; they are included in the following table :

INDUSTRIES.	INCREASE (+) OR DECREASE (—) IN 1898 AS COMPARED WITH 1897 IN —				
	Average Number of Days in Operation	Average Proportion of Business Done	Average Yearly Earnings	Average Number of Persons Employed	"Range"
Cement, kaolin, lime, and plaster, . . .	—16.30	+1.00	—\$6.21	*=	+17
Cooking, lighting, and heating apparatus, . . .	—0.82	+1.88	—16.69	—64	+27
Cordage and twine, . . . . .	—0.48	*=	+8.83	+82	+12
Drugs and medicines, . . . . .	—0.70	+5.04	+2.54	+14	—4
Dyestuffs, . . . . .	—0.27	+8.17	—29.01	+6	+2
Electroplating, . . . . .	—29.56	+5.37	—21.08	—5	—32
Furniture, . . . . .	—0.92	+0.83	+7.62	+29	—66
Glue, isinglass, and starch, . . . . .	—1.27	+3.68	+9.18	—17	—8
Hose: rubber, linen, etc., . . . . .	—4.02	+15.50	+6.20	—187	+49
Ink, mucilage, and paste, . . . . .	—2.81	+6.43	+2.36	+4	+7
Oils and illuminating fluids, . . . . .	—1.68	+3.12	+29.32	—2	—16
Perfumes, toilet articles, etc., . . . . .	—22.01	+3.80	+23.36	—5	+6
Photographs and photographic materials, . . . . .	—0.38	+4.75	+32.24	+3	—4
Printing, publishing, and bookbinding, . . . . .	—0.92	+1.29	—1.21	+310	+229
Print works, dye works, and bleacheries, . . . . .	—4.15	+1.34	+16.47	—25	—30
Sporting and athletic goods, . . . . .	—4.19	+3.00	+2.38	—49	+21
Tallow, candles, soap, and grease, . . . . .	—8.12	+0.95	—3.13	—32	+29
Wooden goods, . . . . .	—0.74	+2.33	+1.93	+5	+19

\* No change.



An increase in average yearly earnings is found in all of the industries in the third class except

Cement, Kaolin, Lime, and Plaster.	Electroplating.
Cooking, Lighting, and Heating Apparatus.	Printing, Publishing, and Bookbinding.
Dyestuffs.	Tallow, Candles, Soap, and Grease.

An increase in the average number of persons employed is shown for the following eight industries :

Cordage and Twine.	Photographs and Photographic Materials.
Drugs and Medicines.	Printing, Publishing, and Bookbinding.
Dyestuffs.	Wooden Goods.
Furniture.	
Ink, Mucilage, and Paste.	

In Cement, Kaolin, Lime, and Plaster the average number of persons employed was the same in each year, and in Cordage and Twine there was no change in the average proportion of business done.

The range of unemployment was narrower in

Drugs and Medicines.	Photographs and Photographic Materials.
Electroplating.	Print Works, Dye Works, and Bleacheries.
Furniture.	
Glue, Isinglass, and Starch.	
Oils and Illuminating Fluids.	

An increase in the average number of females employed accompanied by a decrease in average yearly earnings is shown for

Cooking, Lighting, and Heating Apparatus.	Printing, Publishing, and Bookbinding.
Dyestuffs.	Tallow, Candles, Soap, and Grease.

Seven of the industries in this class show a decrease in the value of goods made and work done ; they are

Cement, Kaolin, Lime, and Plaster.	Print Works, Dye Works, and Bleacheries.
Cooking, Lighting, and Heating Apparatus.	Sporting and Athletic Goods.
Hose : Rubber, Linen, etc.	Tallow, Candles, Soap, and Grease.
Perfumes, Toilet Articles, etc.	

Four industries exhibit a decrease exceeding six days on an average ; they are

Cement, Kaolin, Lime, and Plaster.	Perfumes, Toilet Articles, etc.
Electroplating.	Tallow, Candles, Soap, and Grease.

The fourth and last class includes all those industries which show a decrease in the average number of days in operation together with a decreased average proportion of business done; they are shown in the following table:

INDUSTRIES.	INCREASE (+) OR DECREASE (−) IN 1898 AS COMPARED WITH 1897 IN—				
	Average Number of Days in Operation	Average Proportion of Business Done	Average Yearly Earnings	Average Number of Persons Employed	'Range'
Bicycles, tricycles, etc., . . . . .	−5.45	−10.72	−\$35.76	−556	−789
Boots and shoes (soles, heels, and cut stock), . . . . .	−0.87	−3.62	−6.85	−76	+74
Boots and shoes (stitching, heeling, etc.), . . . . .	−3.18	−2.07	−12.06	−22	−16
Brick, tiles, and sewer pipe, . . . . .	−9.44	−5.11	−18.51	−197	−126
Building materials, . . . . .	−3.12	−2.33	+1.69	−19	−32
Buttons and dress trimmings, . . . . .	−3.94	−0.07	−13.95	+3	−11
Carpetings (in the aggregate), . . . . .	−20.70	−0.50	−6.57	−420	+799
Carpetings (textile), . . . . .	−22.72	−2.63	−9.30	−453	+784
Carriages and wagons, . . . . .	−1.85	−1.95	+19.19	−32	−41
Chemical preparations (compounded), . . . . .	−3.99	−1.27	+24.56	−24	−14
Flax, hemp, and jute goods, . . . . .	−3.43	−2.00	−6.49	+8	+78
Food preparations, . . . . .	−1.59	−1.20	−7.05	+238	+332
Glass, . . . . .	−10.54	−1.92	+25.80	−17	−32
Leather, . . . . .	−1.39	−1.54	+4.49	−132	−25
Liquors (bottled) and carbonated beverages, . . . . .	−0.05	−0.89	−30.29	−4	−24
Liquors (malt), . . . . .	−0.15	−3.61	+19.65	+8	+11
Liquors (distilled), . . . . .	−13.67	−5.67	+75.59	−5	+2
Lumber, . . . . .	−25.19	−0.90	+4.52	−34	−26
Saddlery and harness, . . . . .	−5.10	−0.12	−25.87	−15	−49
Stone (in the aggregate), . . . . .	−5.85	−1.38	−12.89	−127	−257
Stone (quarried), . . . . .	−10.09	−2.99	−18.67	+59	−142
Tobacco, snuff, and cigars, . . . . .	−1.95	−0.24	−13.15	+128	+173
Woollen goods (in the aggregate), . . . . .	−5.87	−2.55	+4.98	+153	+2,201
Woven goods and yarn, . . . . .	−5.43	−2.31	+5.21	+158	+2,147
Shoddy, waste, etc., . . . . .	−33.80	−4.44	−8.79	−5	+54
Worsted goods, . . . . .	−27.08	−5.89	+6.64	+182	+2,380

Of the industries in this class, a decrease in the average number of days in operation, in average proportion of business done, average yearly earnings, and average number of persons employed, is shown for

Bicycles, Tricycles, etc.

Boots and Shoes (Soles, Heels, and Cut Stock).

Boots and Shoes (Stitching, Heeling, etc.).

Brick, Tiles, and Sewer Pipe.

Carpetings (in the aggregate).

Carpetings (Textile).

Liquors (Bottled) and Carbonated Beverages.

Saddlery and Harness.

Stone (in the aggregate).

Woollen Goods (Shoddy, Waste, etc.).

An increase in average yearly earnings is shown for

Building Materials.	Liquors (Distilled).
Carriages and Wagons.	Lumber.
Chemical Preparations (Compound- ed).	Woollen Goods (in the aggregate).
Glass.	Woollen Goods (Woven Goods and Yarn).
Leather.	Worsted Goods.
Liquors (Malt).	

An increase in the average number of persons employed is shown for

Buttons and Dress Trimmings.	Tobacco, Snuff, and Cigars.
Flax, Hemp, and Jute Goods.	Woollen Goods (in the aggregate).
Food Preparations.	Woollen Goods (Woven Goods and Yarn).
Liquors (Malt).	Worsted Goods.
Stone (Quarried).	

The range of unemployment was wider in the following industries :

Boots and Shoes (Soles, Heels, and Cut Stock).	Tobacco, Snuff, and Cigars.
Carpetings (in the aggregate).	Woollen Goods (in the aggregate).
Carpetings (Textile).	Woollen Goods (Woven Goods and Yarn).
Flax, Hemp, and Jute Goods.	Woollen Goods (Shoddy, Waste, etc.).
Food Preparations.	Worsted Goods.
Liquors (Malt).	
Liquors (Distilled).	

In the following industries is found an increase in the average number of females employed together with a decrease in average yearly earnings :

Buttons and Dress Trimmings.	Liquors (Bottled) and Carbonated Beverages.
Food Preparations.	Tobacco, Snuff, and Cigars.

The industries in this class which show an increase in the value of goods made and work done are

Boots and Shoes (Soles, Heels, and Cut Stock).	Liquors (Bottled) and Carbonated Beverages.
Carriages and Wagons.	Liquors (Malt).
Chemical Preparations (Compound- ed).	Tobacco, Snuff, and Cigars.
Food Preparations.	Woollen Goods (in the aggregate).
Leather.	Woollen Goods (Woven Goods and Yarn).
	Worsted Goods.

Of the industries in the fourth class, the following exhibit a decrease of more than six days in the average number of days in operation, a decrease in average proportion of business done, a decrease in the average yearly amount earned by each employé, a decrease in the average number of persons employed, together with a decrease in the value of goods made and work done :

Brick, Tiles, and Sewer Pipe.  
Carpetings (in the aggregate).

Carpetings (Textile).  
Woollen Goods (Shoddy, Waste, etc.).

In the following table is shown the increase (+), decrease (—), or no change (=) in 1898 as compared with 1897, in the amount of capital invested, the value of goods made and work done, the total amount paid in wages, and the average number of persons employed :

INDUSTRIES.	INCREASE (+) OR DECREASE (—) IN 1898 AS COMPARED WITH 1897 IN—			
	Amount of Capital Invested	Value of Goods Made and Work Done	Total Amount Paid in Wages	Average Number of Persons Employed
Agricultural implements, . . . . .	+	+	+	+
Arms and ammunition, . . . . .	+	+	+	+
Artisans' tools, . . . . .	+	+	+	+
Awnings, sails, tents, etc., . . . . .	—	+	+	+
Bicycles, tricycles, etc., . . . . .	—	—	—	—
Boots and shoes, . . . . .	—	+	+	+
Boots and shoes (factory product), . . . . .	—	+	+	+
Soles, heels, and cut stock, . . . . .	—	+	—	—
Boot and shoe findings, . . . . .	+	+	+	+
Stitching, heeling, etc., . . . . .	—	—	—	—
Boxes, barrels, kegs, etc., . . . . .	—	+	+	+
Boxes (paper), . . . . .	+	+	+	+
Brick, tiles, and sewer pipe, . . . . .	—	—	—	—
Brooms, brushes, and mops, . . . . .	+	+	+	+
Building materials, . . . . .	—	—	—	—
Burial cases, caskets, coffins, etc., . . . . .	+	—	—	—
Buttons and dress trimmings, . . . . .	+	—	—	+
Carpetings, . . . . .	—	—	—	—
Textile, . . . . .	—	—	—	—
Other, . . . . .	+	+	+	+
Carriages and wagons, . . . . .	—	+	+	—
Cement, kaolin, lime, and plaster, . . . . .	—	—	—	*=
Chemical preparations (compounded), . . . . .	+	+	—	—
Clocks and watches, . . . . .	+	+	+	+
Clothing, . . . . .	—	—	+	+
Cooking, lighting, and heating apparatus, . . . . .	+	—	—	—
Cordage and twine, . . . . .	—	+	+	+

\* No change.

INDUSTRIES.	INCREASE (+) OR DECREASE (—) IN 1898 AS COMPARED WITH 1897 IN—			
	Amount of Capital Invested	Value of Goods Made and Work Done	Total Amount Paid in Wages	Average Number of Persons Employed
Cotton goods, . . . . .	—	+	—	+
Cotton goods (woven), . . . . .	—	—	—	—
Cotton yarn and thread, . . . . .	+	+	+	+
Cotton waste, . . . . .	+	+	+	+
Crayons, pencils, crucibles, etc., . . . . .	+	+	+	+
Drugs and medicines, . . . . .	—	+	+	+
Dyestuffs, . . . . .	—	+	—	+
Earthen, plaster, and stone ware, . . . . .	—	—	+	+
Electrical apparatus and appliances, . . . . .	+	+	+	+
Electroplating, . . . . .	+	+	—	—
Emery and sand paper and cloth, etc., . . . . .	+	+	+	+
Fancy articles, etc., . . . . .	—	+	+	+
Fertilizers, . . . . .	+	+	+	+
Fine arts and taxidermy, . . . . .	+	+	+	+
Fireworks and matches, . . . . .	—	+	—	—
Flax, hemp, and jute goods, . . . . .	—	—	—	+
Food preparations, . . . . .	+	+	+	+
Furniture, . . . . .	+	+	+	+
Glass, . . . . .	+	—	—	—
Glue, isinglass, and starch, . . . . .	+	+	—	—
Hair work (animal and human), . . . . .	—	—	—	—
Hose: rubber, linen, etc., . . . . .	—	—	—	—
Hosiery and knit goods, . . . . .	+	+	+	+
Ink, mucilage, and paste, . . . . .	+	+	+	+
Ivory, bone, shell, and horn goods, etc., . . . . .	+	+	+	+
Jewelry, . . . . .	+	+	+	+
Leather, . . . . .	+	+	—	—
Leather goods, . . . . .	—	+	+	+
Liquors (bottled) and carbonated beverages, . . . . .	+	+	—	—
Liquors (malt), . . . . .	+	+	+	+
Liquors (distilled), . . . . .	—	—	—	—
Lumber, . . . . .	—	—	—	—
Machines and machinery, . . . . .	+	+	+	+
Metals and metallic goods, . . . . .	—	+	+	+
Models, lasts, and patterns, . . . . .	+	+	+	+
Musical instruments and materials, . . . . .	—	+	+	+
Oils and illuminating fluids, . . . . .	—	+	+	—
Paints, colors, and crude chemicals, . . . . .	—	+	+	+
Paper, . . . . .	+	+	+	+
Paper goods, . . . . .	+	+	+	+
Perfumes, toilet articles, etc., . . . . .	—	—	—	—
Photographs and photographic materials, . . . . .	+	+	+	+
Polishes and dressing, . . . . .	+	+	+	+
Printing, publishing, and bookbinding, . . . . .	+	+	+	+
Print works, dye works, and bleacheries, . . . . .	+	—	+	—
Railroad construction and equipment, . . . . .	+	+	—	—
Rubber and elastic goods, . . . . .	—	+	+	+
Saddlery and harness, . . . . .	—	—	—	—
Scientific instruments and appliances, . . . . .	+	+	+	+
Shipbuilding, . . . . .	+	+	—	—

INDUSTRIES.	INCREASE (+) OR DECREASE (-) IN 1898 AS COMPARED WITH 1897 IN—			
	Amount of Capital Invested	Value of Goods Made and Work Done	Total Amount Paid in Wages	Average Number of Persons Employed
Silk and silk goods, . . . . .	—	+	+	+
Sporting and athletic goods, . . . . .	+	—	—	—
Stone, . . . . .	+	—	—	—
Quarried, . . . . .	+	—	—	+
Cut and monumental, . . . . .	+	—	—	—
Straw and palm leaf goods, . . . . .	—	+	+	—
Tallow, candles, soap, and grease, . . . . .	—	—	—	—
Tobacco, snuff, and cigars, . . . . .	—	+	+	+
Toys and games (children's), . . . . .	+	+	—	—
Trunks and valises, . . . . .	—	—	+	+
Whips, lashes, and stocks, . . . . .	—	+	+	+
Wooden goods, . . . . .	+	+	+	+
Woollen goods, . . . . .	—	+	+	+
Woven goods and yarn, . . . . .	—	+	+	+
Shoddy, waste, etc., . . . . .	—	—	—	—
Worsted goods, . . . . .	+	+	+	+
ALL INDUSTRIES, . . . . .	+	+	+	+

All Industries, in the aggregate, shows an increase in each of the elements considered. The same is true for

Agricultural Implements.

Arms and Ammunition.

Artisans' Tools.

Boot and Shoe Findings.

Boxes (Paper).

Brooms, Brushes, and Mops.

Carpetings (other than textile).

Clocks and Watches.

Cotton Yarn and Thread.

Cotton Waste.

Crayons, Pencils, Crucibles, etc.

Electrical Apparatus and Appliances.

Emery and Sand Paper and Cloth, etc.

Fertilizers.

Fine Arts and Taxidermy.

Food Preparations.

Furniture.

Hosiery and Knit Goods.

Ink, Mucilage, and Paste.

Ivory, Bone, Shell, and Horn Goods, etc.

Jewelry.

Liquors (Malt).

Machines and Machinery.

Models, Lasts, and Patterns.

Paper.

Paper Goods.

Photographs and Photographic Materials.

Polishes and Dressing.

Printing, Publishing, and Bookbinding.

Scientific Instruments and Appliances.

Wooden Goods.

Worsted Goods.

The following industries exhibit a decrease in each of the items considered :

Bicycles, Tricycles, etc.	Hair Work (Animal and Human).
Boots and Shoes (Stitching, Heeling, etc.).	Hose: Rubber, Linen, etc.
Brick, Tiles, and Sewer Pipe.	Liquors (Distilled).
Building Materials.	Lumber.
Carpetings (in the aggregate).	Perfumes, Toilet Articles, etc.
Carpetings (Textile).	Saddlery and Harness.
Cotton Goods (Woven).	Tallow, Candles, Soap, and Grease.
	Woollen Goods (Shoddy, Waste, etc.).

A decrease in capital but an increase in product, wages, and employes is noted in the following industries :

Awnings, Sails, Tents, etc.	Musical Instruments and Materials.
Boots and Shoes (in the aggregate).	Paints, Colors, and Crude Chemicals.
Boots and Shoes (Factory Product).	Rubber and Elastic Goods.
Boxes, Barrels, Kegs, etc.	Silk and Silk Goods.
Cordage and Twine.	Tobacco, Snuff, and Cigars.
Drugs and Medicines.	Whips, Lashes, and Stocks.
Fancy Articles, etc.	Woollen Goods (in the aggregate).
Leather Goods.	Woollen Goods (Woven Goods and Yarn).
Metals and Metallic Goods.	

An increase in capital but a decrease in each of the other items is found in the following industries :

Burial Cases, Caskets, Coffins, etc.	Sporting and Athletic Goods.
Cooking, Lighting, and Heating Apparatus.	Stone (in the aggregate).
Glass.	Stone (Cut and Monumental).

An increase in capital and product but a decrease in wages and employes is noted in

Chemical Preparations (Compound-ed).	Railroad Construction and Equipment.
Electroplating.	Shipbuilding.
Glue, Isinglass, and Starch.	Toys and Games (Children's).
Leather.	
Liquors (Bottled) and Carbonated Beverages.	

The following industries exhibit a decrease in capital and product but an increase in wages and employes: Clothing; Earthen, Plaster, and Stone Ware; and Trunks and Valises.

Carriages and Wagons; Oils and Illuminating Fluids; and Straw and Palm Leaf Goods show an increase in product and wages but a decrease in capital and employes, while Buttons

and Dress Trimmings and Stone (Quarried) show an increase in capital and employes but a decrease in product and wages. In Print Works, Dye Works, and Bleacheries is found an increase in capital and wages and a decrease in product and persons employed, while in Cotton Goods (in the aggregate) and Dyestuffs the reverse is found, that is, a decrease in capital and wages and an increase in product and employes. Flax, Hemp, and Jute Goods shows a decrease in each of the items except persons employed, in which an increase appears. In a subdivision of Boots and Shoes, namely, Soles, Heels, and Cut Stock, and in Fireworks and Matches capital shows a decrease, product an increase, and wages and employes a decrease. Cement, Kaolin, Lime, and Plaster shows a decrease in each of the items considered except persons employed in which no change appears in 1898 as compared with 1897.

In the following table is reproduced the leading facts relative to All Industries, as found in the presentation on pages 153 to 155 :

CLASSIFICATION.	1897	1898	INCREASE (+) OR DECREASE (-) IN 1898	
			Amounts	Percent- ages
Number of private firms,* . . . .	3,509	3,464	-45	-1.28
Number of corporations,* . . . .	1,142	1,172	+30	+2.63
Number of partners, . . . .	5,572	5,424	-148	-2.66
Number of stockholders, . . . .	46,407	46,827	+420	+0.91
Amount of capital invested, . . . .	\$413,290,097	\$413,373,958	+\$83,856	+0.02
Value of stock used, . . . .	\$354,314,944	\$362,346,417	+\$8,031,473	+2.41
Value of goods made and work done, .	\$612,568,842	\$640,871,843	+\$28,303,501	+4.62
Persons employed :				
Average number, . . . .	326,778	332,669	+5,891	+1.80
Males, . . . .	216,821	219,560	+2,739	+1.26
Females, . . . .	109,957	113,109	+3,152	+2.87
Smallest number, . . . .	272,204	271,847	-357	-0.13
Greatest number, . . . .	377,399	386,883	+9,484	+2.38
Excess of greatest over smallest number, . . . .	105,195	114,536	+9,341	+8.88
Total amount paid in wages, . . . .	\$137,986,438	\$140,212,108	+\$2,225,666	+1.61
Average yearly earnings, . . . .	\$422.26	\$421.48	-\$0.78	-0.18
Average proportion of business done, .	60.60	61.19	+0.59	+0.97
Average number of days in operation, .	284.05	286.28	+2.23	+0.79

It will be remembered that these returns were made for the years 1897 and 1898 by identical establishments, and therefore it is possible to make direct comparisons accurately reflecting

\* See head-notes to tables on pages 4 and 5 and 8 and 9; also page 161 of the ANALYSIS.



the condition of the specified industries and of All Industries in the aggregate. From the above table it will be seen that the value of goods made and work done shows an increase of 4.62 per cent in 1898 as against the preceding year. This percentage, based upon the returns of 4,701 representative establishments, is undoubtedly applicable to the State as a whole.\* The increase in number of corporations and the decrease in the number of private firms are complements of each other, and the same cause which affects the firms and corporations has its influence on the partners and stockholders. In the 4,701 establishments, capital increased 0.02 per cent; value of stock used increased 2.41 per cent; value of product increased 4.62 per cent; total wages increased 1.61 per cent, while average yearly earnings declined 0.18 per cent. The average number of males increased 1.26 per cent and the average number of females, 2.87 per cent.

	INDUSTRIES.	Number of Establishments Considered	Amount of Capital Invested	Average Number of Persons Employed
1	Boots and shoes, . . . . .	644	\$22,414,665	51,897
2	Carpetings, . . . . .	12	6,582,652	4,203
3	Cotton goods, . . . . .	169	112,702,330	81,385
4	Leather, . . . . .	95	6,533,029	5,465
5	Machines and machinery, . . . . .	359	32,686,813	18,658
6	Metals and metallic goods, . . . . .	380	17,191,783	13,450
7	Paper, . . . . .	80	20,733,967	8,797
8	Woollen goods, . . . . .	142	26,930,024	19,438
9	Worsted goods, . . . . .	35	17,166,388	13,107

[NOTE. It is proper to explain certain designations used in the above table. By "Industry" value created above the value of stock and materials consumed. The values presented in this from the total value of goods made and work done in each of the specified industries, the value division of the proceeds of each industry, one part of this industry product is paid to the labor fund from which are paid freights, insurance, interest on loans (credit capital), interest on stock those for stock and wages. The remainder, if any, is the profit of the employer. The entire becomes a "Profit and Minor Expense Fund," and is thus designated in the table. Of course, we have enumerated, paid out of this balance, are in themselves considerable in amount, and for materials (stock), and wages.]

The note presented with this table explains certain designations used in it. The largest industry product per \$1,000 of capital invested is found in Boots and Shoes, \$1,775.70. No other industry approaches this figure. The nearest to it, however, are Metals and Metallic Goods, the industry product being

\* See table in INTRODUCTION, pages xxi-xxiii.

There was a decrease of 0.13 per cent in the smallest number of persons employed and an increase of 2.38 per cent in the greatest number of persons employed, while more persons were out of employment for some time during the year 1898, the percentage of increase over the preceding year being 8.88. The average proportion of business done, based upon the full productive capacity of the establishments, was but 0.97 per cent greater in 1898 than in 1897, and the average number of days in operation shows an equally slight increase, the percentage being 0.79.

The next table presents the actual product per \$1,000 of capital invested in each of the nine leading industries, with the average product per employé, the percentages of industry product paid in wages, and the percentages devoted to other expenses for the year 1898.

Total Amount Paid in Wages During the Year	Industry Product	Profit and Minor Expense Fund	INDUSTRY PRODUCT		PERCENTAGE OF INDUSTRY PRODUCT		
			Per \$1,000 of Capital	Average per Employé	Devoted to Profit and Minor Expenses	Paid in Wages	
\$23,904,714	\$39,801,786	\$15,897,072	\$1,775.70	\$766.94	39.94	60.06	1
1,431,921	2,378,468	946,547	361.32	566.90	39.80	60.20	2
26,204,240	41,080,646	14,786,406	364.51	504.77	35.99	64.01	3
2,640,868	4,718,601	2,077,733	722.27	363.42	44.08	55.97	4
10,068,181	18,822,587	8,754,406	575.85	1,008.82	46.51	53.49	5
6,842,531	12,593,225	5,750,694	732.51	936.30	45.66	54.34	6
3,719,611	8,938,012	5,218,401	431.08	1,016.08	58.38	41.62	7
7,205,613	12,449,168	5,243,555	462.28	640.46	42.12	57.88	8
4,789,876	9,894,950	5,105,074	576.41	754.94	51.59	48.41	9

Product" is meant the actual result of the productive forces in the industry, that is, the added and the following tables under the designation "Industry Product," are obtained by deducting of stock used, the difference being added value or actual product due to the industry. In the force in the form of wages, this being labor's share of the product. The balance constitutes a (fixed or invested capital), rents, commissions, salaries, etc.; in fact, all expenses other than balance of the industry product remaining after the deduction of the amount paid in wages, it will be understood that the term "Minor Expense" is relative. The expenses, some of which are only to be classed as "Minor" in comparison with the generally larger amounts expended

\$732.51, and Leather, the industry product being \$722.27. Following these two industries rank Worsted Goods and Machines and Machinery, in which the industry products are \$576.41 and \$575.85, respectively. Next come Woollen Goods and Paper, the industry products per \$1,000 of capital being \$462.28

and \$431.08, respectively. Cotton Goods follows, with an industry product per \$1,000 of capital of \$364.51. Carpetings ranks lowest among the industries in the selected list, the industry product per \$1,000 of capital being \$361.32.

These figures afford an indication of the efficiency of the capital invested in 1898 in these industries, and the figures in the next column of the table giving the average industry product per employé, indicate the efficiency of labor. With respect to this point, Paper leads the other industries, the average product per employé being \$1,016.03, and is closely followed by Machines and Machinery with an industry product per employé of \$1,008.82. Not far below these two industries is Metals and Metallic Goods, in which an average industry product per employé of \$936.30 appears. Leather comes next with an average product of \$863.42, and is followed in turn by Boots and Shoes in which the average per employé is \$766.94, Worsted Goods, with an average of \$754.94, Woollen Goods with an average of \$640.46, and Carpetings with an average of \$565.90. Cotton Goods ranks lowest in respect to average product per employé, the average being \$504.77.

When the percentage of industry product paid in wages is considered, we find that Cotton Goods leads, the percentage being 64.01. Next rank Carpetings and Boots and Shoes, the percentages being 60.20 and 60.06, respectively. Woollen Goods follows, with a percentage of 57.88, and is in turn followed by Leather with a percentage of 55.97; Metals and Metallic Goods, 54.34; Machines and Machinery, 53.49, and Worsted Goods, 48.41. In Paper, ranking lowest in this comparison, the percentage is 41.62. These percentages of industry product paid in wages are the complements of the industry product devoted to profit and minor expenses, these two items aggregating 100 per cent or the whole of the industry product.

In the following presentation, the rank of the different industries for 1898, as regards the amount of industry product per \$1,000 of capital, is compared with the rank of the same industries for 1897, as derived from the report on Annual Statistics of Manufactures for that year :

**1897.**

Boots and Shoes.  
 Leather.  
 Metals and Metallic Goods.  
 Machines and Machinery.  
 Worsted Goods.  
 Woollen Goods.  
 Paper.  
 Carpetings.  
 Cotton Goods.

**1898.**

Boots and Shoes.  
 Metals and Metallic Goods.  
 Leather.  
 Worsted Goods.  
 Machines and Machinery.  
 Woollen Goods.  
 Paper.  
 Cotton Goods.  
 Carpetings.

In the above comparison, Boots and Shoes, Woollen Goods, and Paper retain the same rank in each year. The places occupied by Metals and Metallic Goods and Leather, Worsted Goods and Machines and Machinery, and Cotton Goods and Carpetings are reversed.

With respect to the average industry product per employé, the rank of the industries in each of the years appears as follows :

**1897.**

Machines and Machinery.  
 Paper.  
 Metals and Metallic Goods.  
 Leather.  
 Boots and Shoes.  
 Worsted Goods.  
 Woollen Goods.  
 Carpetings.  
 Cotton Goods.

**1898.**

Paper.  
 Machines and Machinery.  
 Metals and Metallic Goods.  
 Leather.  
 Boots and Shoes.  
 Worsted Goods.  
 Woollen Goods.  
 Carpetings.  
 Cotton Goods.

In this comparison, all of the selected industries retained the same rank in each year except Machines and Machinery and Paper, the position of these two industries in 1897 being reversed in 1898.

The next comparison relates to the percentage of industry product paid in wages, the industries ranking as follows :

**1897.**

Cotton Goods.  
 Carpetings.  
 Woollen Goods.  
 Boots and Shoes.  
 Machines and Machinery.  
 Metals and Metallic Goods.  
 Leather.  
 Worsted Goods.  
 Paper.

**1898.**

Cotton Goods.  
 Carpetings.  
 Boots and Shoes.  
 Woollen Goods.  
 Leather.  
 Metals and Metallic Goods.  
 Machines and Machinery.  
 Worsted Goods.  
 Paper.

In this comparison, Cotton Goods, Carpetings, Metals and Metallic Goods, Worsted Goods, and Paper retain the rank in 1898 which was held in 1897. Boots and Shoes and Woollen Goods changed positions and Leather rose from seventh place to fifth, exchanging places with Machines and Machinery which fell from fifth to seventh place in 1898.

In this connection, we present a series of separate tables for the nine leading industries for the purpose of comparison between the years 1897 and 1898. The first relates to Boots and Shoes.

*Boots and Shoes.* [Comparisons for 644 Establishments.]

CLASSIFICATION.	1897	1898
Amount of capital invested, . . . . .	\$23,200,058	\$22,414,665
Value of goods made and work done (gross product), . . . .	\$104,042,441	\$107,188,460
Value of stock used and other materials consumed in production, .	\$65,182,608	\$67,386,674
Industry product (gross product less value of stock and materials),	\$38,859,833	\$39,801,786
Wages (labor's direct share of product), . . . . .	\$23,560,417	\$23,904,714
Profit and minor expense fund (Industry product less wages), .	\$15,299,416	\$15,897,072
Percentage of industry product paid in wages, . . . . .	60.63	60.06
Percentage of industry product devoted to profit and minor expenses,	39.37	39.94
Percentage of profit and minor expense fund of capital invested, .	65.95	70.92

The percentages of industry product paid in wages in 1897 and 1898 were 60.63 and 60.06, respectively, a slight decrease in the last named year. The percentage of industry product devoted to profit and minor expenses shows a very slight increase, being 39.37 in 1897 and 39.94 in 1898. The percentage which this profit and minor expense fund forms of capital invested was 65.95 in 1897 and 70.92 in 1898; that is to say, after eliminating the cost of stock, practically the same amount was devoted to wages in 1898 as in 1897, leaving a slightly larger amount for the payment of expenses (other than stock and wages) and for profit, and this amount formed a larger percentage of the total capital in the industry in 1898 than in 1897. In other words, wage conditions remained the same in both years, the cost of stock was practically the same, the fund from which the manufacturer drew his expenses and profits (if any) was but slightly larger, and the percentage of this fund for expenses and possible profit of the capital invested was about five per cent greater in 1898 than in 1897.

A similar comparison for Carpetings follows:

*Carpetings.* [Comparisons for 12 Establishments.]

CLASSIFICATION.	1897	1898
Amount of capital invested, . . . . .	\$6,784,921	\$6,582,652
Value of goods made and work done (gross product), . . . .	\$6,364,709	\$6,016,943
Value of stock used and other materials consumed in production, .	\$3,898,404	\$3,638,475
Industry product (gross product less value of stock and materials),	\$2,466,305	\$2,378,468
Wages (labor's direct share of product), . . . . .	\$1,005,379	\$1,431,921
Profit and minor expense fund (industry product less wages), . .	\$860,926	\$946,547
Percentage of industry product paid in wages, . . . . .	65.09	60.20
Percentage of industry product devoted to profit and minor expenses,	34.91	39.80
Percentage of profit and minor expense fund of capital invested, .	12.69	14.38

The percentages of industry product paid in wages in this industry in 1897 and 1898 were 65.09 and 60.20, respectively, a decrease in the last named year. Eliminating wages, the fund devoted to profit and minor expenses increased from 34.91 in 1897 to 39.80 in 1898, and this fund formed but 12.69 per cent of the capital invested in 1897 as against 14.38 per cent in 1898.

The next table presents a comparison for Cotton Goods.

*Cotton Goods.* [Comparisons for 169 Establishments.]

CLASSIFICATION.	1897	1898
Amount of capital invested, . . . . .	\$113,437,432	\$112,702,330
Value of goods made and work done (gross product), . . . .	\$88,272,454	\$88,374,733
Value of stock used and other materials consumed in production, .	\$50,857,806	\$47,294,087
Industry product (gross product less value of stock and materials),	\$37,414,648	\$41,080,646
Wages (labor's direct share of product), . . . . .	\$27,193,335	\$26,294,240
Profit and minor expense fund (industry product less wages), . .	\$10,221,313	\$14,786,406
Percentage of industry product paid in wages, . . . . .	72.68	64.01
Percentage of industry product devoted to profit and minor expenses,	27.32	35.99
Percentage of profit and minor expense fund of capital invested, .	9.01	13.12

In this industry, the percentage of industry product paid in wages decreased in 1898 as compared with 1897, the percentages being 64.01 and 72.68, respectively. Of course, the percentage of industry product devoted to profit and minor expenses correspondingly increased, 35.99 in 1898 as against 27.32 in 1897. The profit and minor expense fund formed 9.01 per cent of capital in 1897 and 13.12 in 1898.

The next table relates to Leather.

*Leather.* [Comparisons for 95 Establishments.]

CLASSIFICATION.	1897	1898
Amount of capital invested, . . . . .	\$6,281,541	\$6,583,020
Value of goods made and work done (gross product), . . . . .	\$19,317,480	\$19,647,769
Value of stock used and other materials consumed in production, . . . . .	\$14,532,557	\$14,929,168
Industry product (gross product less value of stock and materials), . . . . .	\$4,784,923	\$4,718,601
Wages (labor's direct share of product), . . . . .	\$2,679,496	\$2,640,868
Profit and minor expense fund (industry product less wages), . . . . .	\$2,105,427	\$2,077,733
Percentage of industry product paid in wages, . . . . .	56.00	55.97
Percentage of industry product devoted to profit and minor expenses, . . . . .	44.00	44.03
Percentage of profit and minor expense fund of capital invested, . . . . .	33.79	31.80

In this industry, we find practically the same conditions in each year, the percentage of industry product paid in wages being 56 in 1897 and 55.97 in 1898. The percentage of industry product devoted to profit and minor expenses shows no material gain, the percentage being 44 in 1897 and 44.03 in 1898. The percentage which the profit and minor expense fund formed of capital invested was 33.79 in 1897 as against 31.80 in 1898.

A comparison for Machines and Machinery follows :

*Machines and Machinery.* [Comparisons for 359 Establishments.]

CLASSIFICATION.	1897	1898
Amount of capital invested, . . . . .	\$32,677,927	\$32,686,813
Value of goods made and work done (gross product), . . . . .	\$26,979,408	\$28,964,913
Value of stock used and other materials consumed in production, . . . . .	\$9,276,096	\$10,142,326
Industry product (gross product less value of stock and materials), . . . . .	\$17,703,312	\$18,822,587
Wages (labor's direct share of product), . . . . .	\$9,505,410	\$10,068,181
Profit and minor expense fund (industry product less wages), . . . . .	\$8,197,902	\$8,754,406
Percentage of industry product paid in wages, . . . . .	53.69	53.49
Percentage of industry product devoted to profit and minor expenses, . . . . .	46.31	46.51
Percentage of profit and minor expense fund of capital invested, . . . . .	25.09	26.78

As in the case of Leather, the conditions were practically the same in both years, the percentage of industry product paid in wages being 53.49 in 1898 as against 53.69 in 1897, while the percentage devoted to profit and minor expenses was 46.51 in 1898 as against 46.31 in 1897. The percentage of profit and minor expense fund of capital invested was 26.78 in

1898, being but a slight increase over 1897 when the percentage was 25.09.

A comparison for Metals and Metallic Goods follows :

*Metals and Metallic Goods.* [Comparisons for 380 Establishments.]

CLASSIFICATION.	1897	1898
Amount of capital invested, . . . . .	\$17,367,796	\$17,191,783
Value of goods made and work done (gross product), . . .	\$21,702,203	\$23,328,223
Value of stock used and other materials consumed in production, .	\$9,845,655	\$10,734,998
Industry product (gross product less value of stock and materials),	\$11,856,548	\$12,593,225
Wages (labor's direct share of product), . . . . .	\$6,834,101	\$6,842,581
Profit and minor expense fund (industry product less wages), .	\$5,222,447	\$5,750,694
Percentage of industry product paid in wages, . . . . .	55.95	54.34
Percentage of industry product devoted to profit and minor expenses,	44.05	45.66
Percentage of profit and minor expense fund of capital invested, .	30.07	33.45

Conditions in this industry did not materially vary in 1898 as compared with 1897, the percentage of industry product paid in wages being 54.34 in 1898 as against 55.95 in 1897. A slight increase in the percentage of industry product devoted to profit and minor expenses is shown in 1898 as compared with 1897, the percentages being 45.66 and 44.05, respectively. The percentage of profit and minor expense fund of capital invested rose from 30.07 in 1897 to 33.45 in 1898.

The facts for Paper are shown in the following table :

*Paper.* [Comparisons for 80 Establishments.]

CLASSIFICATION.	1897	1898
Amount of capital invested, . . . . .	\$20,546,478	\$20,733,967
Value of goods made and work done (gross product), . . .	\$18,131,485	\$20,104,855
Value of stock used and other materials consumed in production, .	\$10,175,492	\$11,166,843
Industry product (gross product less value of stock and materials),	\$7,955,993	\$8,938,012
Wages (labor's direct share of product), . . . . .	\$3,493,786	\$3,719,611
Profit and minor expense fund (industry product less wages), .	\$4,462,207	\$5,218,401
Percentage of industry product paid in wages, . . . . .	43.91	41.62
Percentage of industry product devoted to profit and minor expenses,	56.09	58.38
Percentage of profit and minor expense fund of capital invested, .	21.72	25.17

In this industry, the percentage of industry product paid in wages fell from 43.91 in 1897 to 41.62 in 1898, while the percentage of industry product devoted to profit and minor



expenses rose correspondingly from 56.09 in 1897 to 58.38 in 1898. The percentage of profit and minor expenses of capital invested also rose from 21.72 in 1897 to 25.17 in 1898.

The next table relates to Woollen Goods.

*Woollen Goods.* [Comparisons for 142 Establishments.]

CLASSIFICATION.	1897	1898
Amount of capital invested, . . . . .	\$27,792,875	\$26,930,024
Value of goods made and work done (gross product), . . . .	\$29,622,054	\$31,633,903
Value of stock used and other materials consumed in production, .	\$17,415,255	\$19,184,735
Industry product (gross product less value of stock and materials),	\$12,206,799	\$12,449,168
Wages (labor's direct share of product), . . . . .	\$7,052,842	\$7,205,613
Profit and minor expense fund (industry product less wages), .	\$5,153,957	\$5,243,555
Percentage of industry product paid in wages, . . . . .	57.78	57.88
Percentage of industry product devoted to profit and minor expenses,	42.22	42.12
Percentage of profit and minor expense fund of capital invested, .	18.54	19.47

The conditions in this industry show no material change. The percentage of industry product paid in wages was 57.78 in 1897 and 57.88 in 1898, while the percentage devoted to profit and minor expenses was 42.22 in 1897 and 42.12 in 1898. The percentage of profit and minor expense fund of capital invested shows a slight gain from 18.54 in 1897 to 19.47 in 1898.

The final table relates to Worsted Goods.

*Worsted Goods.* [Comparisons for 35 Establishments.]

CLASSIFICATION.	1897	1898
Amount of capital invested, . . . . .	\$16,802,284	\$17,166,388
Value of goods made and work done (gross product), . . . .	\$24,694,793	\$25,818,780
Value of stock used and other materials consumed in production, .	\$15,070,871	\$15,923,830
Industry product (gross product less value of stock and materials),	\$9,623,922	\$9,894,950
Wages (labor's direct share of product), . . . . .	\$4,655,489	\$4,789,876
Profit and minor expense fund (industry product less wages), .	\$4,968,483	\$5,105,074
Percentage of industry product paid in wages, . . . . .	48.37	48.41
Percentage of industry product devoted to profit and minor expenses,	51.63	51.59
Percentage of profit and minor expense fund of capital invested, .	29.57	29.74

This industry exhibits practically the same conditions in 1897 and 1898, the percentage of industry product paid in wages being 48.41 in 1898 as against 48.37 in 1897. The percentage of industry product devoted to profit and minor ex-

penses was 51.59 in 1898 as against 51.63 in 1897, and this profit and minor expense fund formed 29.74 per cent of capital invested in 1898 as against 29.57 per cent in 1897.

The data contained in this volume warrant the following condensed general statements concerning the years 1897 and 1898 for 4,701 establishments in 80 classified industries :

#### CAPITAL INVESTED.

*The increase in the amount of capital which has been returned as devoted to production in 4,701 representative establishments in 1898 as compared with 1897, in All Industries, amounted to 0.02 per cent. In the nine leading industries, representing 63.61 per cent of all capital, as returned in 1898, the following facts appear: An increase is shown for Leather, Machines and Machinery, Paper, and Worsted Goods, the percentages being as follows: 4.84, 0.03, 0.91, and 2.17, respectively. A decrease in capital is found in Boots and Shoes of 3.39 per cent; Carpetings, 2.98 per cent; Cotton Goods, 0.65 per cent; Metals and Metallic Goods, 1.01 per cent; and Woollen Goods, 3.10 per cent.*

#### STOCK USED.

*In All Industries, the increase in the value of stock used amounted to 2.41 per cent in 1898 as compared with 1897. In the nine leading industries, the value of stock used in which amounted to 55.23 per cent of the aggregate value of stock used in All Industries in 1898, the following percentages of increase appear: Boots and Shoes, 3.38; Leather, 2.73; Machines and Machinery, 9.34; Metals and Metallic Goods, 9.03; Paper, 9.74; Woollen Goods, 10.16; and Worsted Goods, 5.66. In Carpetings, a decrease of 6.67 per cent is shown, and in Cotton Goods a decrease of 7.01 per cent.*

#### GOODS MADE.

*The increase in the aggregate value of goods made and work done in All Industries, in 1898 as compared with 1897, was 4.62 per cent. In one industry, namely, Carpetings, a decrease of 5.46 per cent appears. In the other eight leading industries the following increases appear: Boots and Shoes, 3.02 per cent;*

*Cotton Goods, 0.12 per cent; Leather, 1.71 per cent; Machines and Machinery, 7.36 per cent; Metals and Metallic Goods, 7.49 per cent; Paper, 10.88 per cent; Woollen Goods, 6.79 per cent; and Worsted Goods, 4.55 per cent. In the nine leading industries above named, the value of goods made and work done constituted 54.78 per cent of the entire product value returned in 1898 from 4,701 establishments.*

#### PERSONS EMPLOYED.

*In 1898, the increase in the average number of persons employed was 5,891, or 1.80 per cent; of this number 2,739 were males and 3,152 were females. The number of persons employed at the periods of employment of the smallest number shows a decrease of 357, or 0.13 per cent; while the number employed at the periods of employment of the greatest number increased 8,984, or 2.38 per cent. The range of unemployment as indicated by the difference between the smallest and greatest number employed, was wider in 1898 than in 1897. In the nine leading industries, the following increases in the average number of persons employed are found: Boots and Shoes, 3.68 per cent; Cotton Goods, 0.23 per cent; Machines and Machinery, 2.17 per cent; Metals and Metallic Goods, 0.04 per cent; Paper, 3.37 per cent; Woollen Goods, 0.79 per cent; and Worsted Goods, 1.02 per cent. Carpetings shows a decrease of 9.09 per cent and Leather a decrease of 2.36 per cent.*

#### WAGES PAID.

*The total amount paid in wages increased \$2,225,665, or 1.61 per cent, in 1898 as compared with 1897. Three of the nine leading industries show the following percentages of decrease: Carpetings, 10.80; Cotton Goods, 3.31; and Leather, 1.44. The other six industries show percentages of increase as follows: Boots and Shoes, 1.46; Machines and Machinery, 5.92; Metals and Metallic Goods, 3.14; Paper, 6.46; Woollen Goods, 2.17; and Worsted Goods, 2.89.*

*The average yearly earnings per individual, without regard to sex, age, differences in skill, or duration of employment, were \$422.26 in 1897, falling to \$421.48 in 1898, a decrease of \$0.78, or 0.18 per cent. The range from highest to lowest*

*yearly earnings was from \$782.12 to \$291.94 in 1897 and from \$801.77 to \$295.03 in 1898. The higher earnings rule in the industries demanding greater skill and employing males chiefly and the lower in factory industries employing a large proportion of females and young persons.*

#### PROPORTION OF BUSINESS DONE.

*The average proportion of business done reached 60.60 per cent in 1897, and 61.19 in 1898 of the full productive capacity of the 4,701 establishments, an increase of 0.97 per cent.*

*The average number of days in operation in 1897 was 284.05, and in 1898, 286.28, an increase of 2.23 days, or 0.79 per cent.*



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# THE TEXTILE INDUSTRIES.

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## THE TEXTILE INDUSTRIES.

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The manufacture of clothing was one of the earliest industries established by the settlers in this country, the importation of clothing or of the materials necessary to manufacture clothing being almost prohibitive on account of the excessive cost. Stringent laws were passed by the English Government making it a punishable offence to import machinery for the production of cloth and it was also provided that no cloth factories should be established in the colonies, thus compelling the colonists either to purchase their clothing and cloth from the mother country or to depend upon such limited means as could be employed in their own homes to provide clothing for themselves and their families.

On November 8, 1633, the General Court of Massachusetts, in fixing the price at which certain articles might be sold (not exceeding four pence per shilling profit), ordered, "and for linen and other commodities, which in regard of their close stowage and small hazard may be afforded at a cheap rate, we do advise all men to be a rule to themselves in keeping a good conscience, assuring them that, if any man shall exceed the bounds of moderation, we shall punish them severely."\*

On October 28, 1636, the General Court passed the following: "No person after one month shall make or sell any bone lace or other lace to be worn upon any garment or linen, upon pain of five shillings the yard for every yard of such lace so made or sold, or set on; neither shall any tailor set any lace upon any garment upon pain . . . for every offence; provided, that binding or small edging lace may be used upon garments or linen."†

In 1639, the General Court further enlarged upon the wearing of lace in the following manner: "Whereas there is much complaint of the excessive wearing of lace, and other super-

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\* Record of the Colony of the Massachusetts Bay in New England, Vol. 1, p. 111.

† Ibid. p. 183.



fluities tending to little use or benefit but to the nourishing of pride and exhausting of men's estates, and also of evil example to others, it is therefore ordered by this Court, and decreed, that henceforward no person whatsoever shall presume to buy or sell, within this jurisdiction, any manner of lace, to be worn or used within our limits. And that no tailor or any other person whatsoever shall hereafter set any lace or points upon any garments, either linen, woollen, or any other wearing clothes whatsoever, and that no person hereafter shall be employed in making of any manner of lace, but such as they shall sell to such persons as shall and will transport the same out of this jurisdiction, who, in such case, shall have liberty to buy the same; and that hereafter no garment shall be made with short sleeves whereby the nakedness of the arm may be discovered in the wearing thereof; and such as have garments already made with short sleeves shall not hereafter wear the same unless they cover their arms to the wrist with linen or otherwise; and that hereafter no person whatsoever shall make any garment for women, or any of their sex, with sleeves more than half an ell wide in the widest place thereof, and so proportionable for bigger or smaller persons."\*

On May 13, 1640, "this court, taking into serious consideration the absolute necessity for the raising of the manufacture of linen cloth, etc., doth declare that it is the intent of this court that there shall be an order settled about it, and therefore doth require the magistrates and deputies of the several towns to acquaint the townsmen therewith, and to make inquiry what seed is in every town, what men and women are skilful in the breaking, spinning, weaving, what means for the providing of wheels, and to consider with those skilful in that manufacture what course may be taken to raise the materials and produce the manufacture, and what course may be taken for teaching the boys and girls in all towns the spinning of the yarn, and to return to the next court their several and joint advice about this thing. The like consideration would be had for the spinning and weaving of cotton-wool."†

On October 7, 1640, the court ordered that "for the encouragement of the manufacture of linen, woollen, and cotton

\* Record of the Colony of the Massachusetts Bay in New England, Vol. 1, p. 274.

† Ibid, p. 294.

cloth, . . . whosoever shall make any sort of the said cloths fit for use, and shall show the same to the next magistrate or to two of the deputies of this court, upon certificate thereof to this court, or the court of assistants, the party shall have allowance of three pence in the shilling of the worth of such cloth, according to the valuation, which shall be certified with it. And the said magistrate or deputies shall set such mark upon said cloth as it may be found to have been allowed for; provided, this order shall extend only to such cloth as shall be made within this jurisdiction, and the yarn here spun also, and of such materials as shall be raised also within the same, or else of cotton. This order to continue for three years next following.” \*

This act was repealed June 2, 1641, as burdensome to the “present wants” of the country, but it was stated that “this court, taking into consideration the want of clothing which is like to come upon us the next winter, and not finding any way to supply us so well as by cotton, which we find not like to be provided in due time for the present want, and understanding withal, from the certain knowledge of divers of the court, that there is a kind of wild hemp growing plentifully all over the country, which if it were gathered and improved, might serve for a present supply till cotton may be had, it is therefore ordered, that the deputies of this court shall take order in their several towns that speedy notice be given to all masters of families of the said wild hemp, with direction when to gather it and how to use it; and for their encouragement they may well expect that what they shall gather more than they shall use is likely to be taken of from them; for some have already offered to take of a good quantity at two pence the pound, and to pay ready money for it, as the members of this court can inform any who shall desire to sell any of the same hemp at the rate aforesaid. And it is desired, and will be expected, that all masters of families should see that their children and servants should be industriously employed, so as the mornings and evenings and other seasons may not be lost, as formerly they have been (and if it be so continued will certainly bring us to poverty); but that the honest and profitable custom of England may be practised amongst us, so as all

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\* Record of the Colony of the Massachusetts Bay in New England, Vol. 1, p. 303.

hands may be employed for the working out of hemp and flax and other needful things for clothing, without abridging any such servants of their due time for food and rest and other needful refreshings." \* On June 1, 1641, previous to the repeal of this law, there was granted to Goodman Nutt, Marten Underwood, John Whitney, Henry Kemball, and John Witheredge allowance for  $83\frac{1}{2}$  yards, valued at 12*d.* per yard.† On November 23, 1698, 300 acres of land were granted to William Habberfield of Boston as a reward for his instructing many persons in the trade of cloth making.

### *Early History.*

Below we present in the briefest possible manner a condensed history of the early establishment of the textile manufactures so far as it relates to Massachusetts and incidentally to other States.

The first experimental planting of cotton seed in this country was made in Virginia in 1621 and in 1643 a fulling mill was built at Rowley, Mass., by John Pearson, a clothier. Edward Johnson, one of the first settlers of Woburn, in his book entitled "Wonder-working Providence," speaking of the first settlers of Rowley, says that they were "the first people that set upon making cloth in this western world; for which end they built a fulling mill, and caused their little ones to be very diligent in spinning cotton-wool, many of them having been clothiers in England." In March, 1642-43, the English House of Commons passed an Act exempting from duties, subsidies, and taxation all merchandise intended for the use of the Colonies, and all Colonial produce exported thence to England. While this had its intended effect in stimulating the industries of the colonists it also had the effect of retarding the extension of the domestic manufacture of clothing, the Act having increased the facilities for the cheap and constant supply of English manufactures, and limited the colonists to the production of raw materials.‡ Subsequently the remonstrances of the English manufacturers caused the passage of the obnoxious Stamp Acts and the consequences which followed undoubtedly hastened the establishment of the textile indus-

\* Record of the Colony of the Massachusetts Bay in New England, Vol. 1, p. 322.

† Ibid, p. 316. ‡ Bishop's History of American Manufactures, Vol. 1, p. 303.

tries. On October 28, 1767, it was voted at a meeting held in Faneuil Hall, Boston, that on and after December 31, 1767, no one should purchase any of the following articles (among others) from abroad : Cordage, men's and women's hats, ready-made wearing apparel, or gloves ; gold, silver, or thread lace of all sorts ; broadcloth that cost about 10s. per yard ; silk or cotton velvets or silk of all kinds for garments ; or gauze, lawns, or cambrics.\* Efforts were made to establish factories for the manufacture of articles needed by the colonists, but no particular event in connection with the manufacture of cotton goods is noted until after the Revolutionary War.

In 1780, an association was formed in Worcester, for the purpose of spinning and weaving cotton. In February, it was stated in the *Spy*, that a "subscription was making for defraying the expense of a jenny." On April 30, it was announced that "on Tuesday last, the first piece of corduroy made at the manufactory in this town was taken from the loom. Good judges speak highly of it as superior to English. The carding machine, which is a great curiosity, as well as is the spinning machine, has been completed some time. In a little time it is hoped the corduroys, jeans, etc., made in this town will be sufficient to supply the country."† In December, it was said that the proprietors, "had lately erected buildings and taken other measures to carry on business extensively. A large quantity of fustian, jean, and corduroy are for sale now, lasting longer, and retaining color and beauty better than the foreign." In May, 1790, S. Brazier of Worcester advertised for sale "jeans, corduroys, federal rib, and cottons." Other associations similar to the one in Worcester were formed in East Bridgewater in 1786 and in Beverly in 1787 ; in the latter place, a year later, was built the first cotton mill in the United States. During 1786, models of an early and imperfect form of the Arkwright machines were smuggled into this country by Thomas Somers of Baltimore and became the property of Massachusetts. This State also about this time paid two Scotchmen, Robert and Alexander Barr, £200 for the first spinning-jenny and stock card ever made in this country. These, with the Arkwright models were deposited

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\* Boston Town Records, 1758-1769, p. 220 *et seq.*

† Lincoln's History of Worcester, p. 321.

with Col. Hugh Orr at his iron works at East Bridgewater for the benefit of the public.

The Beverly association in 1788, with machinery made from these models together with such other machinery as it was possible to smuggle into this country from England, began operations. A building of brick was erected in the second parish, near "Baker's Corner," at the junction of the Birch Plain and Ipswich Roads, and a company of proprietors incorporated February 3, 1789, without any exemption or privilege except that of acting as a "body corporate." A periodical of the day, describing the factory, says: "An experiment was made with a complete set of machines for carding and spinning cotton, which answered the warmest expectations of the proprietors. The spinning-jenny spins 60 threads at a time, and with the carding machine 40 pounds of cotton can be well carded per day. The warping machine and the other tools and machinery are complete, performing their various operations to great advantage, and promise much benefit to the public, and emolument to the patriotic adventurers." Not realizing the sanguine anticipations of the proprietors, they abandoned it as a body corporate, and the business was carried on by individuals, who subsequently erected a mill at the head of Bass River, for the purpose of spinning cotton by water power. This enterprise proving unprofitable, the machinery and buildings of the cotton mill were finally removed, and the brick factory was destroyed by fire in 1828.

In 1790, the second mill was constructed at Providence, R. I.; in 1795, the third was erected in the same State; and in 1798, Samuel Slater with several of his wife's relatives, under the name of Samuel Slater & Co. built on the east side of the Pawtucket River in Massachusetts, the fourth mill. This was the first mill built throughout on the Arkwright principle.

In 1806 or 1807, the old woollen mill at Byfield was transformed into a cotton mill by the introduction of some English machinery and the manufacture of warp yarn and wicking was begun. Later, the manufacture of tickings, coarse ginghams, and sheetings was established, all being woven on hand looms. At this time ginghams sold for 75 cents and sheetings for 50 cents per yard. At about this time also Seth Bemis of Water-

town began the manufacture of cotton duck and during 1809 sold in Boston the first lot for 65 cents per yard for No. 1, and 58 cents a yard for No. 2 quality; the cloth being made from Sea Island cotton. In 1813, Dexter Wheeler and others established the manufacture of cotton cloth and in 1820 the company was incorporated as the Fall River Manufactory. The Troy Cotton and Woollen Manufactory was also established in 1813. By a special act of the Legislature, February 13, 1813, the Boston Manufacturing Co. was established with an authorized capital of \$400,000, \$100,000 of which was subscribed at the time of incorporation. In 1814, Barnabas Hedge, Jr. and others organized the Plymouth Cotton and Woollen Manufactory in Plymouth, and the third mill was established in Fall River by Samuel Rodman and others in 1821. In 1816, Seth Bemis applied the power loom in the manufacture of cotton duck at his mill in Watertown and in 1840 the Lowell Duck Mill was started for the exclusive production of cotton duck. In 1810, cotton goods were first printed in Philadelphia and in 1822 a large print works was erected at Lowell.

The power loom, which revolutionized textile manufacture in Massachusetts and, in fact, throughout the entire world, was first constructed by Francis C. Lowell of Boston and Paul Moody of Amesbury. A company, as before stated, was formed in February, 1813, known as the Boston Manufacturing Co. and a mill of 1,700 spindles was erected at Waltham, in which all the processes of manufacture were carried on under the same roof, the first instance of the kind in the United States. Operations began in the autumn of 1814, and the first goods woven were heavy unbleached sheetings of No. 14 yarn, 37 inches wide, 44 picks to the inch, and in weight something less than three yards to a pound; a class of goods, which, under the name of "domestics," has ever since formed the staple product of American cotton mills. In 1824, the Hamilton Manufacturing Co. was organized at Lowell, and the power loom was there first applied in the manufacture of twilled and fancy goods; this mill was also the first to manufacture cotton drills. Its print works went into operation in 1828.

The methods adopted by the early settlers for carrying on the various factories which were built and run by "Com-

panies," especially cotton mills, is explained in a graphic manner in the following extract from the "History of Dedham," by Erastus Worthington, published in 1827. "I will describe the operations of a single corporation, those of the Norfolk Cotton Factory, the first in this town which engaged in these attempts. As their methods of proceeding were similar to that of many hundred of other companies and corporations at that time, I am justified in the minuteness of the detail. Here at Dedham the most enterprising men in the town looked around them; they saw that there was here water power, capital, and an ardent desire to be no longer dependent on foreign looms. Nothing was wanting but skill in the operations to be undertaken; and for that deficiency they had no doubt of soon finding a remedy in their own experience. As no one had a sufficient capital for an entire establishment, the joint capital of many was used. In 1808, after a year's preparation, 30 individuals were united by an incorporating act. Among these were merchants, traders, farmers, blacksmiths, hatters, a lawyer, a physician, and an innkeeper, but not a single man who had any skill in the art of manufacturing cotton goods. In organizing their corporation, the necessity of entrusting all their complicated operations to the control of one mind was not perceived by the members, but they were guided, it seems, in this business by republican maxims and models. They entrusted the executive authority to a president, three directors, clerk, and treasurer, whose distinct and appropriate duties were defined in a lengthy code of by-laws. The three directors were required to remain in the factory one week each, and alternately; but no one was permitted to do anything of importance without the concurrence of his colleagues. All the officers were chosen annually. During six or seven years the annual meetings were fully attended. After the business was done and the officers had made a flattering report of net gains, the members partook of a good dinner. Thus formed, the corporation began business, built a large wooden factory on the upper dam on Mother Brook; placed in it the tub wheel and common water frames. When the cotton arrived at the factory it was divided into small parcels and sent to the neighboring houses to be picked by hand; over the picking department one and sometimes two agents presided. When

the cotton was spun, then again it was sent abroad to be wove by hand. Over this department of weaving an agent presided. The spacious storerooms adjoining the factory were soon crowded with cotton yarn and cotton cloths where all the goods were retailed excepting what were sent to numerous factors abroad. As their plan was to retail their own goods at their own counter, it became desirable to have a pretty good assortment, and then they began to make satinets; and the legislature granted them leave so to do by an additional section to their charter. The high price of cotton goods at that time permitted them to move on unconcerned about the wages of the workmen and agents; and money flowed pretty freely into the hands of persons who never before or since that time have been so well off to live. The affairs of this company remained in nearly the same situation until the end of the war in 1814."

From the same history we also quote the following: "Fred-erick A. Taft was the first regular manufacturer of cotton goods in the town and he soon showed the difference there is between the produce of labor employed on good machinery and directed by a single experienced agent, and that which is derived from labor on the imperfect machinery first used, and under the control of the inexperienced officers of an aggregate corporation. In 1814, the price of picking cotton by hand was five cents; the price of weaving by the yard varied from five to 14 cents; the price of good cotton shirting was 50 cents per yard. In 1826, the price for weaving common cotton cloth per yard was nine mills; the price of weaving fine cloths for calicoes, was one and one-quarter cents; the price of cotton shirting was 16 cents; and the price of common cloths was from 10 to 11 cents."

In 1742, M. Dubreuil, a French planter, invented a cotton-gin, for separating the fiber from the seed. "The invention greatly stimulated the culture of cotton by partially removing the greatest obstacle to the business as a profitable industry. The separation of the seed had previously been effected by picking it from the wool with the fingers, at the rate of one pound a day. This operation, as the evening task of the women, children, or other members of the household, long continued to be the practice in the cotton regions, until an in-



creased production called for mechanical appliances. The bow-string, which had been used immemorially in India for the purpose, was first introduced into Georgia, whence originated the commercial term 'Bowed Georgia Cotton.' Mention is made in 1772 of another contrivance for the same purpose, which appears to have been a form, original or derived from the East, of the roller-gin, the best contrivance for cleaning cotton, until the invention of the saw-gin in 1793 . . . by Eli Whitney which gave an immense impulse to the cultivation of cotton, and 'conferred on the plantation States a benefit that can scarcely be estimated in money.' . . . It enabled the planter to clean for market, by the labor of one man, a thousand pounds of cotton, in place of five or six by the hand, or 25 by the roller-gin."\*

As previously stated, the first attempt at woollen goods manufacture, was made at Rowley in 1643. In 1645, laws were enacted by the General Court to encourage the propagation and preservation of sheep, and in 1656, spinning was systematically enforced upon all classes by requiring every family, during 30 weeks of each year, to spin weekly three pounds of wool, cotton, or flax. The first weaver in Chelmsford (now a part of Lowell), was granted 30 acres of land the same year as an inducement to set up weaving there.

The second fulling mill was built at Watertown in 1662 by Thomas Agar, a fuller of Roxbury, and was sold in December, 1663, to a cloth worker from Dedham, England, named Thomas Loveran. At Dedham, Mass., in 1681, a fulling mill was established by Draper and Fairbanks on the first artificial canal built in this country. About 1753, Deacon Crofoot requested of the town of Pittsfield the use of a mill privilege for a given number of years. In 1767, the mills were built, and in connection with them a fulling mill belonging to Jacob Ensign. In 1842, Thos. F. Plunkett purchased this privilege. About the year 1788, a woollen factory was put in operation at Stockbridge, and made about 6,000 yards of fulled cloth annually. In June, 1794, the first incorporated woollen factory in Massachusetts was erected at the falls of the Parker River in Newbury and run by Arthur Schofield and other English operatives with machinery made in Newburyport by Standring, Armstrong, &

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\* Bishop's History of American Manufactures, Vol. 1, pages 351 and 355.

Guppy. In 1804, Schofield, who had engaged in the construction of carding machines at Pittsfield, made from merino wool the first fine broadcloth probably woven in this country. In 1807, Elkanah Watson introduced into Berkshire County the first pair of merino sheep from the Livingston flock, from the fleece of which, in 1808, Schofield made a piece of blue cloth superior to any yet made here. At this time, the price for weaving broadcloth was from 50 to 60 cents a yard. In 1809, a company was formed in Pittsfield to manufacture fine cloth, and in 1812, Mr. Watson was awarded a prize of \$50 for a piece of broadcloth superior to any heretofore made in America. During the same year the first cloth mill of any size in the country was erected at Pittsfield by L. Pomeroy. It employed only hand looms, the first broadcloth loom not being introduced there until 1825 or 1826, about which time the Pontoosuc Manufacturing Co. began the manufacture of all-wool and cotton-warp broadcloth.

The earliest mention found of stocking weaving is in 1723, when it was noted that Matthew Burne of Chester County, Penn., served John Camm one or two years at stocking weaving.\* In 1790, there were exported from Martha's Vineyard, 9,000 pairs of stockings. The only stocking factory in the United States in 1831 was the Newburyport Hose Manufacturing Co., and its looms, which were run by women, produced about twenty stockings per day. In 1813, and for the three following years, several patents were recorded by citizens of Massachusetts and New York for stocking looms and knitting machines. In 1837, William Appleton, Benjamin R. Nichols, Nathan Appleton, and associates established the manufacture of knit hose and shirts at Lowell, and in 1852, Thomas Dalby began the manufacture of knit goods at Watertown.

In 1672, a company of hatters in Massachusetts asked for exclusive privileges for their business in that colony, which were promised "when they should make as good hats and sell them as cheap as those imported were."

As early as 1791 a carpet mill conducted by William Peter Sprague was in operation in the Northern Liberties of the city of Philadelphia, in which was made carpetings called

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\* Bradford's American Weekly Mercury for 1723.

Turkey and Axminster. At Providence, R. I., the same year and undoubtedly in a great many places in the United States, considerable quantities of carpeting were woven in families for domestic use. In October, 1804, Peter and Ebenezer Stowell began weaving carpets and plaids at Worcester, and at one time had six looms of their own invention and construction in operation; they also printed calicoes and built shearing machines. About the same time, numerous small factories for the manufacture of ingrain and other carpets were established, one being at Medway and several others in the vicinity of Boston. The Lowell Manufacturing Co. at Lowell, was incorporated in 1828, and, in addition to cotton looms, ran about 70 carpet looms. Power looms were but little used at this time, except in the manufacture of plain and simple fabrics, and in Europe all efforts to employ them in weaving ingrained carpets had been abandoned as impracticable. "The difficulty of incorporating two distinct webs, such as compose the two-ply or Kidderminster carpet, into one fabric at a single operation so as to bring the colors regularly to the surface and make the figures match, and at the same time leave a smooth surface and a perfect selvedge, seemed to require so many adjustments under the guidance of ever-present watchfulness and judgment as to be utterly beyond the power of automatic art on any scale that would pay. This difficult achievement was most successfully accomplished by Erastus B. Bigelow of Massachusetts, who had previously, when quite a young man, and without any mechanical training, devised a power loom for weaving knotted counterpanes, and another for weaving coach lace, by simply studying the texture of those fabrics. The coach-lace loom, patented in 1837, contained all the essential principles of the Brussels-carpet loom afterwards matured by him. Having, in connection with his brother, Horatio N. Bigelow and others, established the Clinton Co. at Lancaster, Mass., for the manufacture of coach lace, and supplied the Lancaster Quilt Co. at the same place, with an entirely new counterpane loom, Mr. Bigelow made, it is said, a written contract to furnish a company at Lowell with power looms for ingrain carpeting before he had even made a model or drawing of the machines."\* His first power loom

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\* Introduction, Census of United States, 1860.

was erected within a year and averaged ten to twelve yards of carpeting each day the product of the hand looms being only eight yards a day besides being inferior in quality. A second loom with improvements produced 18 yards; and a third, essentially modified and improved, raised the product to 25 or 27 yards daily of two-ply, and of 17 or 18 yards of three-ply. The Lowell Manufacturing Co., the assignees of the patentee, were the first to manufacture carpeting successfully by power looms, erecting later a new mill of great size, which was equipped with 200 of the latest looms.

In 1848, Mr. Bigelow introduced the Brussels-carpet loom, which was the coach-lace loom modified to adapt it for weaving wider fabrics in figures to match, and, afterwards, to admit of a velvet pile. In the same year, together with H. N. Bigelow, Henry P. Fairbanks, and others, he organized the Bigelow Carpet Co. at Clinton. Thirty power looms were put into the plant and made five-frame Brussels, Wiltons, and tapestry carpetings. Each loom was run by one woman who wove from 20 to 25 yards daily of Brussels carpeting; the average product of a hand loom was at that time three or four yards daily.

Silk was raised in Newport, R. I., in 1758, and in 1769, a citizen of Boston offered premiums of \$10 to \$40 each, for the largest lots of mulberry trees raised in the colony, and a manufactory of silk was established about the same time. In 1790, sewing silk was made in Worcester County and elsewhere in this State, and 40,000 yards of silk and thread lace were made at Ipswich, in which town that business had been successfully prosecuted for several years. The first mill in America for making sewing silk and twist by water power was built by Hanks Bros. at Mansfield, Conn., about 1810. In 1824, the Boston & Ipswich Lace Factory, at Ipswich, was incorporated with a capital stock of \$150,000 to make "bobbinet lace" by machinery. It employed about 800 women on lace work, but was compelled, about three years later, to discontinue the business. In 1827, the New England Lace Factory in this town was incorporated, but also proved unsuccessful. In 1823, a mill in Medway produced daily 50 yards of five-inch lace. In 1835, the New England Silk Co. at Dedham was incorporated with a capital of \$50,000; its capacity was 200 pounds of sewing silk weekly, and it was equipped with

16 machines. In 1834, Samuel Whitmarsh began the manufacture of silk watch ribbons, vestings, etc. in Northampton. Previous to 1837, coach lace was made altogether on hand looms but owing to the inventions of Erastus B. Bigelow, mentioned on page 226, it was thereafter made on power looms, the Clinton Co., at Lancaster, making annually between one and two million yards of coach lace of worsted, cotton, and silk.

Flax was cultivated in New Netherlands as early as 1626 and in 1629 the seeds of flax and hemp were sent to this State. In 1640, the General Court passed the order, noted on page 216, respecting the manufacture of linen, etc. In 1641, the authorities at Salem, granted to Samuel Cornhill, an acre of ground for the cultivation of flax, but his success must have been limited for in 1673 the collector of customs reported that no linen was made in New England worth above 2s. 6d. a yard. The first improvement in the domestic manufacture of flax and hemp was introduced by the Protestant Irish who settled at Londonderry, New Hampshire, about 1719, and consisted of the linen or foot-spinning wheel for spinning flax. Many of these people settled in Massachusetts, and in 1722 the General Court granted a bounty of 20s. for each bolt of sail duck made from domestic materials; John Powell was one of the recipients of this bounty and later was granted a loan of \$3,000 by the General Court. In 1734, so successful had been the cultivation of flax and hemp that they were received at the public treasury in payment of taxes at the rate of 6d. per pound for flax and 4d. per pound for hemp. About the same time, a spinning school was established in Boston for the aid of the poor, and supported by subscriptions and by a tax on carriages. In 1788, a factory for the manufacture of sail cloth and other kinds of linen was started by an incorporated company which was aided by a bounty. In 1789, factories for the manufacture of sail cloth were also begun at Haverhill, Salem, Springfield, and Nantucket. After 1810, a decline occurred in the manufacture of linen cloth which was attributed to the rapid progress made in the cultivation of cotton and the manufacture of cotton goods and in the introduction at about the same time of merino sheep and the manufacture of wool. In 1851, S. M. Allen of Boston, began experiments in cottonizing flax, and in 1858, with J. C. Butterfield and others, established at East Green-

wich, R. I., a mill with machinery adapted to working up "fibrilia" or fibrilized flax; he also fitted a small mill at Watertown, Mass., in 1859, where calicoes and sheetings, half cotton and half flax, were made. In 1835, Smith, Dove, & Co. began the manufacture of yarn, thread, and twine at Andover; in 1846, Henry H. Stevens of Webster began the manufacture of linen goods, and in 1849, Mr. Stevens was granted a gold medal by the American Institute for the best piece of American linen spun by machinery and woven on the power loom. In 1852, the American Linen Manufacturing Co. of Fall River was established, and was the first and only regularly equipped manufactory of linen on a large scale from long-line flax.

In 1641, John Harrison of Salisbury, England, began the manufacture of rope in Boston. In 1662, John Heyman of Charlestown was permitted to make rope in Boston, but in the following year was ordered to make only "fishing lines during the pleasure of the town," and later was prohibited from making rope but had liberty to make fishing lines, and finally was ordered to "take up his posts and depart the town." In 1748, John Crocker of Newbury was granted permission to erect a ropewalk "and to improve the place for 10 years for the making of ropes and for no other use." In 1794, there were 14 large ropewalks in Boston besides one establishment which manufactured twines and fishing lines. In 1819 and 1820, Robert Graves of Boston took out several patents for the manufacture of cordage by machinery, and in 1821, Winslow, Lewis, & Co. had two ropewalks in Boston equipped with this machinery, worked by horse power and employing 100 hands. In 1831, Daniel Treadwell of Boston was granted a patent for spinning hemp and flax, and in 1834, was granted several other patents for improvements "in spinning and roping these materials into cordage." In 1835, Benjamin Sewall and Moses Day established the manufacture of rope at Roxbury, and in 1836 and 1838, Mr. Day patented machines for spinning rope yarns and twisting the strands.

#### *Statistics of Manufactures.*

The collection of statistics of manufactures is not of recent date. Massachusetts, in 1837, gathered the first statistics of its growing industries. Judged by the present standard they

are meagre and unsatisfactory but taken as they are they supply a starting point. In 1840, the United States Government published the first national figures on manufactures. In 1845, Massachusetts made its second enumeration, and in 1850, the Federal authorities gave to the public its second, but very much abbreviated census of industries. Since then the collection of industrial facts has progressed rapidly, but with ever changing systems of classification rendering it difficult to compare the data in a comprehensive manner. However, in the following table, we have combined the returns of cotton, wool, flax, worsted, silk, etc., so as to show the aggregate value of the product during each census year, deeming it possible to compare the aggregates even though the system of classification adopted for the details were dissimilar:

*Value of Goods Made: By State and National Censuses. 1837-1898.*

YEARS AND CENSUSES.	Value of Goods Made	INCREASE (+) OR DECREASE (—) IN EACH YEAR COMPARED WITH EACH PREVIOUS YEAR	
		Amounts	Percentages
1837 (State), . . . . .	\$23,346,399	—	—
1840 (U. S.), . . . . .	25,758,735	—\$2,587,604	—9.13
1845 (State), . . . . .	30,802,322	+5,043,587	+19.58
1850 (U. S.), . . . . .	35,638,049	+4,835,727	+15.70
1855 (State), . . . . .	54,114,710	+18,476,661	+51.85
1860 (U. S.), . . . . .	68,801,226	+14,686,516	+27.14
1865 (State), . . . . .	69,143,927	+342,701	+0.50
1870 (U. S.), . . . . .	110,678,612	+41,534,685	+60.07
1875 (State), . . . . .	128,965,281	+18,286,619	+16.52
1880 (U. S.), . . . . .	173,936,399	+44,971,168	+34.87
1885 (State), . . . . .	144,745,699	—29,190,700	—16.78
1890 (U. S.), . . . . .	196,434,260	+51,688,561	+36.71
1895 (State), . . . . .	196,964,178	+529,928	+0.27
1898 (Annual), . . . . .	193,376,168	—3,588,010	—1.82

The above table exhibits the aggregate value of product of all the establishments properly included under the head of "Textile Industries." The first line shows the value of goods made in the textile industries in Massachusetts according to the State Census of 1837; the second, the value of goods made in the textile industries in Massachusetts according to the United States Census of 1840; and the other lines show alternately the results of the State Census and of the National

Census. The final line exhibits the aggregate value of goods made in the textile industries of Massachusetts for the year ending December 31, 1898, taken in connection with the present report.

In 1850, the National Government failed to authorize a complete publication of the manufactures of the country by States, so that, as previously stated, the figure for that year is incomplete. The values of goods made for Cotton Goods, Woollen Goods, and Cordage were published separately, and were respectively, \$19,712,461, \$12,770,565, and \$1,459,968. We have, however, estimated the value of goods made in 1850 for Carpetings and for Hosiery from the percentages of increase shown for those industries in the census volume for 1860, the results being respectively, \$1,628,645, and \$66,410, and these were the only industries for which figures were available by estimate or otherwise.

For 1865, 1870, and 1875, the values given in the preceding table are gold values, the currency values originally given having been reduced to a gold basis so as to allow of proper comparison with the gold values for the other years. The average currency value of One Dollar in gold was \$2.11 in 1865, \$1.25 in 1870, and \$1.12 in 1875.

It is a matter for regret that the systems of classification adopted by Massachusetts and the United States have been so dissimilar as to affect the value of comparisons between the State and National figures. Until 1875, so far as Massachusetts is concerned, no attempt was made toward uniformity or consolidation in classifying the industries. In 1885, condensation was carried out systematically and in a manner to be fairly comparable with the figures given in the 1890 United States Census. In 1895, the same system in use in 1885 was continued, with slight modifications, and in 1898 was started a system of classification which it is hoped will prove the best yet adopted, sufficient detail being given to render future comparisons with the United States Census figures of value, thus permitting a review of the industries of the Commonwealth once every five years on substantially the same basis.

In the following table is shown the number of establishments reporting in 1895 and 1898 classified under their appropriate industry titles :



*Number of Establishments. 1895, 1898.*

INDUSTRIES.	NUMBER OF ESTABLISHMENTS	
	1895	1898
<b>All Textiles.</b>	675	500
Carpetings, . . . . .	14	8
Cordage and twine, . . . . .	46	23
Cotton goods, . . . . .	188	180
Cotton, woollen, and other textiles, . . . . .	4	-
Flax, hemp, jute, and linen goods, . . . . .	10	9
Hosiery and knit goods, . . . . .	77	43
Mixed textiles, . . . . .	16	-
Print works, dye works, and bleacheries, . . . . .	106	35
Silk and silk goods, . . . . .	17	13
Woollen goods, . . . . .	166	153
Worsted goods, . . . . .	31	36

From the above table, there is an apparent loss of 175 establishments in comparing 1898 with 1895; differences in classification, of course, account for some of the decrease, but to the inclusion in 1895 of establishments not of a manufacturing nature and their exclusion in 1898 is due the major part of the loss shown. For example, in 1895, under the industry head of Carpetings were included not only establishments manufacturing carpetings of a textile composition, but those which manufactured oil-cloth, etc.; in 1898, these have been omitted from this comparison. Under the head of Print Works, Dye Works, and Bleacheries, in 1895, were included establishments in which clothing, etc., were dyed, bleached, and cleansed, and while the product value was small in comparison with the aggregate product of all the establishments in the industry, the number of establishments reporting such product was large. Changes in classification have resulted in the disappearance of two industries, namely, "Cotton, Woollen, and Other Textiles" and "Mixed Textiles," the establishments being transferred to other industry classifications. Had establishments such as are above described been excluded in the industry classification for 1895, the figures for the Textile Industries would stand as follows:

*Number of Textile Establishments. 1895, 1898.*

INDUSTRIES.	NUMBER OF TEXTILE ESTABLISHMENTS	
	1895	1898
<b>All Textiles.</b>	<b>593</b>	<b>500</b>
Carpetings, . . . . .	9	8
Cordage and twine, . . . . .	39	23
Cotton goods, . . . . .	188	180
Cotton, woollen, and other textiles, . . . . .	4	-
Flax, hemp, and jute goods, . . . . .	9	9
Hosiery and knit goods, . . . . .	77	43
Mixed textiles, . . . . .	16	-
Print works, dye works, and bleacheries, . . . . .	37	35
Silk and silk goods, . . . . .	17	13
Woollen goods, . . . . .	166	163
Worsted goods, . . . . .	31	36

It will be seen, in comparing the 1895 figures in the above table with those for the same year given in the one immediately preceding, that changes occur in Carpetings; Cordage and Twine; Flax, Hemp, and Jute Goods; and Print Works, Dye Works, and Bleacheries. The reasons for these changes, as well as other facts relating to the industries, are brought out in the following notes:

*Carpetings.* According to the Decennial Census of 1895, there were 14 establishments included under this industry head. In 1898, returns are made by eight establishments, five others, although making return, were manufacturing carpetings other than textile, and, therefore, are not included in this comparison, and one was not in operation during the year 1898.

*Cordage and Twine.* In 1895, 46 establishments reported; in 1898, there are shown but 23. Of the remaining 23, 11 have gone out of business since 1895, one has removed from the State, four have been transferred to other industries, and the other seven would not now be included as textiles.

*Cotton Goods.* In 1895, 188 establishments appear as against 180 in 1898. Since 1895, 11 establishments have shut down permanently; seven were idle during 1898, though manufacturing was not discontinued permanently; one removed to New York State; and five of those in operation in 1895, have, since that year, consolidated with other establishments

whose reports are included in this showing. Deducting these establishments, 24 in number, from the number reporting in 1895, it will be seen that 164 of the old establishments remained in business in 1898. On the other hand, since 1895, seven new establishments have come into existence, one which was idle in 1895 started up in 1898 and made a report for that year, and eight have been transferred from other industry classifications to the one now under consideration, thus making a total of 180 establishments included in 1898 under the industry head of Cotton Goods.

*Cotton, Woollen, and Other Textiles.* Four establishments were reported in 1895; since this date they have been differently classified and appear in 1898, one as Cotton Goods, two as Woollen Goods, and one as Silk and Silk Goods.

*Flax, Hemp, and Jute Goods.* In 1895, there were 10 establishments reported under this industry head. Since 1895, the following changes have occurred: One establishment has discontinued operations; one, the product of which is more properly classified under a different industry head, has been transferred thereto; and one, for a similar reason, has been transferred from a different industry head to Flax, Hemp, and Jute Goods. The net result of these changes is to reduce the number of establishments in this class to nine.

*Hosiery and Knit Goods.* In 1895, 77 establishments made returns in this industry. In the presentation for 1898, 43 establishments appear, leaving a balance of 34 establishments to be accounted for. Many of the establishments in this industry were of limited proportions in 1895 and included some who manufactured within their own homes, having one or two machines which they operated in the winter months or at such times when the demand for the particular class of goods made by them was sufficient to warrant the risk of manufacturing; of these, 23 were not in operation during 1898, except by fits and starts, and 13 were altogether out of business; one large establishment, owing to reorganization, did no manufacturing during 1898, one removed to New Hampshire, and two were transferred to other industries. Since 1895, there have been five new establishments added to the number included under this industry head and one has been transferred from another industry.

*Mixed Textiles.* In 1895, there were 16 establishments classified under this industry head; none appearing in 1898. Of the 16, one has gone out of business since 1895, one was not in operation in 1898, two were consolidated with other establishments, eight were transferred to Woollen Goods and four to Worsteds Goods.

*Print Works, Dye Works, and Bleacheries.* In 1895, the Decennial Census reported 106 establishments under this head, 69 of these were dyers and bleachers of clothing, etc., and cannot be properly classed under the textile industries, leaving 37 establishments which properly belong under this industry head. Of these, four were out of business in 1898, two were transferred to other industries, and one was consolidated with another establishment, leaving a balance of 30 establishments; since 1895, there have been added five new establishments, making 35 from which returns have been received.

*Silk and Silk Goods.* In 1895, returns were made by 17 establishments, and in 1898, by 13. Since 1895, three establishments have been transferred to other industries, one retired from business, one consolidated with another firm, and one was shut down during the year 1898. Since 1895, there has been one new establishment started and one was transferred to this industry from the old classification Cotton, Woollen, and Other Textiles.

*Woollen Goods.* In 1895, 166 establishments were shown in the Decennial Census under this industry head; since that year three mills were burned and not rebuilt, 10 plants were idle during the year 1898, two were sold, one was taken by the city of Worcester, two consolidated with other concerns, two transferred to other industries, and 18 were out of business or not in operation during the year. Deducting the above 38 mills from the number returned in 1895 leaves 128 of the 166 mills in operation in 1898. Since 1895, there have been 14 establishments transferred from other industries to Woollen Goods, four mills which were not running in 1895 had started up and were in operation in 1898, and there were seven new mills established, making a total of 25 establishments to add to the 128 old ones, thus accounting for the 153 establishments reporting in 1898.

*Worsted Goods.* In 1895, there were 31 establishments

classed under this industry head; since then, two mills shut down and business was discontinued, one was consolidated with another mill, and one was transferred to another industry. In 1898, there were 36 establishments reporting; this number was made up of the 27 establishments which were in operation both in 1895 and 1898, six transferred from other industries, and three new mills placed in operation since 1895.

In order to show the changes in the value of goods made on the basis of the classification in 1898, the following table is introduced. The changes mentioned in the preceding notes have been applied to the returns for 1895 in so far as they relate to transfers from one industry to another, and the industries are, therefore, comparable on the classification which was adopted in 1898.

*Value of Goods Made. All Textiles. 1895, 1898.*

INDUSTRIES.	VALUE OF GOODS MADE		INCREASE (+) OR DECREASE (—) IN 1898	
	1895	1898	Amounts	Percent-ages
Carpetings (textile), . . . . .	\$6,631,659	\$5,298,216	—\$1,333,443	—20.11
Cordage and twine, . . . . .	4,937,180	4,917,489	—19,691	—0.40
Cotton goods, . . . . .	95,661,548	89,702,330	—5,959,218	—6.23
Flax, hemp, and jute goods, . . . . .	3,064,787	3,451,650	+386,863	+12.62
Hosiery and knit goods, . . . . .	5,867,404	5,183,760	—183,644	—3.42
Print works, dye works, and bleacheries, . . . . .	22,409,660	20,531,893	—1,877,767	—8.38
Silk and silk goods, . . . . .	4,043,189	4,629,757	+586,568	+14.51
Woollen goods, . . . . .	33,087,490	33,734,793	+647,303	+1.96
Worsted goods, . . . . .	21,761,261	25,926,280	+4,165,019	+19.14

From the above table, it will be noted that in the manufacture of Textile Carpetings there has been a falling off in the value of product of 20.11 per cent. Cordage and Twine, Cotton Goods, Hosiery and Knit Goods, and Print Works, Dye Works, and Bleacheries, also show decreases in 1898 as compared with 1895. The other textile industries show increases, the highest percentage, 19.14, being found in Worsted Goods, the second highest, 14.51, in Silk and Silk Goods, and the third, 12.62, in Flax, Hemp, and Jute Goods. An increase of 1.96 per cent is shown for Woollen Goods.

In the following table, we have reproduced from the Census of 1895 the value of goods made in 593 establishments report-

ing in that year for the combined textile industries, in comparison with the 500 establishments making return in 1898, for certain cities and towns having three or more establishments. The names of cities are printed in small capitals.

*Value of Goods Made: By Cities and Towns. 1895, 1898.*

CITIES AND TOWNS.	VALUE OF GOODS MADE		INCREASE (+) OR DECREASE (-) IN 1898	
	1895	1898	Amounts	Percentages
<b>All Textiles.</b>	<b>\$196,964,178</b>	<b>\$193,376,168</b>	<b>-\$3,588,010</b>	<b>-1.82</b>
Adams, . . . . .	1,657,602	2,583,991	+926,389	+56.89
Andover, . . . . .	1,051,566	930,567	-120,999	-11.51
Athol, . . . . .	117,192	115,674	-1,518	-1.30
Attleborough, . . . . .	530,237	571,290	+41,053	+7.74
Blackstone, . . . . .	822,428	567,420	-255,008	-31.01
Boston, . . . . .	2,754,191	1,263,456	-1,490,735	-54.13
Canton, . . . . .	1,116,510	834,247	-282,263	-25.28
Charlton, . . . . .	305,118	292,783	-12,335	-4.04
CHICOPEE, . . . . .	3,555,386	3,596,061	+402,675	+7.23
Clinton, . . . . .	3,068,121	3,048,158	-19,963	-0.65
Dedham, . . . . .	441,383	781,803	+340,420	+77.13
Dudley, . . . . .	1,399,413	1,519,333	+119,920	+8.57
FALL RIVER, . . . . .	33,327,408	30,230,954	-3,096,454	-9.29
FITCHBURG, . . . . .	4,409,706	4,848,745	+439,039	+9.96
Franklin, . . . . .	1,021,091	1,554,497	+533,406	+52.24
Grafton, . . . . .	1,085,440	801,289	-284,150	-26.18
Great Barrington, . . . . .	450,562	842,105	+391,543	+86.90
Holden, . . . . .	689,209	658,446	-30,763	-4.46
HOLYOKE, . . . . .	7,036,019	8,564,399	+1,528,380	+21.72
Hyde Park, . . . . .	733,497	686,428	-47,069	-6.42
LAWRENCE, . . . . .	23,389,974	26,303,813	+2,913,839	+12.46
Leicester, . . . . .	880,659	856,066	-24,593	-2.79
LOWELL, . . . . .	25,717,554	24,123,206	-1,594,348	-6.20
Methuen, . . . . .	1,244,455	1,137,196	-107,259	-8.62
Millbury, . . . . .	944,118	689,311	-254,807	-26.99
Monson, . . . . .	571,565	527,769	-43,796	-7.66
Needham, . . . . .	247,771	220,943	-26,828	-10.83
NEW BEDFORD, . . . . .	13,541,298	11,209,933	-2,331,365	-17.22
NEWTON, . . . . .	1,186,127	634,583	-551,544	-46.50
NORTH ADAMS, . . . . .	9,904,541	9,889,343	-15,198	-0.15
North Andover, . . . . .	732,850	599,493	-133,357	-18.20
Northbridge, . . . . .	750,680	937,971	+187,291	+24.95
Oxford, . . . . .	371,864	657,300	+285,436	+76.76
Palmer, . . . . .	2,089,305	2,119,550	+30,245	+1.45
PITTSFIELD, . . . . .	2,877,512	2,771,544	-105,968	-3.68
Plymouth, . . . . .	2,585,632	3,461,945	+876,313	+33.89
SOMERVILLE, . . . . .	219,125	161,230	-57,895	-26.42
Southbridge, . . . . .	1,345,175	1,450,402	+105,227	+7.82
SPRINGFIELD, . . . . .	933,931	1,027,052	+93,121	+9.97
TAUNTON, . . . . .	3,749,729	3,813,515	+63,786	+1.70

*Value of Goods Made: By Cities and Towns. 1895, 1898—Concluded.*

CITIES AND TOWNS.	VALUE OF GOODS MADE		INCREASE (+) OR DECREASE (—) IN 1898	
	1895	1898	Amounts	Percentages
Uxbridge, . . . . .	\$817,140	\$886,163	+\$69,023	+2.33
Walpole, . . . . .	289,520	277,110	−12,410	−4.29
WALTHAM, . . . . .	1,698,066	1,602,828	−95,238	−5.61
Ware, . . . . .	2,031,028	2,120,583	+89,555	+4.41
Watertown, . . . . .	514,364	476,513	−37,851	−7.36
West Boylston, . . . . .	663,484	574,713	−88,771	−13.38
WORCESTER, . . . . .	4,308,208	3,972,196	−336,012	−7.79
Other cities and towns, . . . . .	28,111,415	26,680,251	−1,431,164	−5.27

Fall River easily leads as the city producing the greatest value of textile goods, the amount in 1895 being \$33,327,408, and in 1898, \$30,230,954, a decrease of \$3,096,454, or 9.29 per cent. This is the largest numerical decrease found in the table and the reason therefor is found in the fact that owing to the overproduction of 1897 a curtailment was rendered absolutely necessary. Therefore the various mills following a systematic plan reduced not only the number of pieces of cotton cloth carried over from 1897 but cut down the production for 1898.\* Lawrence ranks second in the value of textile goods manufactured, the value in 1895 being \$23,389,974 increasing to \$26,303,813 in 1898, a gain of 12.46 per cent. The third city in textile importance is Lowell, in which \$25,717,554 worth of goods was produced in 1895, falling to \$24,123,206 in 1898, a decrease of 6.20 per cent. This decrease may be accounted for by the consolidation of two of the large mills in that city and by the decline in production due to the depression which affected business on account of the Spanish-American war. New Bedford is the fourth city in rank, the value of textile goods produced in which decreased 17.22 per cent. The same cause which affected Fall River affected New Bedford, together with the consolidation of two of the largest mills. North Adams ranks fifth on the basis of value of product and shows the slight decrease of 0.15 per cent; Holyoke ranks sixth with an increase in product value of 21.72 per cent; and then follow in the order

\* See INDUSTRIAL CHRONOLOGY, pages 280 and 281, *post*.

named, seventh, Fitchburg, 9.96 per cent increase; eighth, Worcester, 7.69 per cent decrease; ninth, Taunton, 1.70 per cent decrease; and tenth, Chicopee, 7.23 per cent increase. Of the towns, Plymouth ranks first, the value of product being \$2,585,632 in 1895 and \$3,461,945 in 1898, an increase of 33.89 per cent; Clinton ranks second and shows a decrease in 1898 of 0.65 per cent; Adams ranks third with an increase of 55.89 per cent; Ware, fourth, 4.41 per cent increase; Palmer, fifth, 1.45 per cent increase; Franklin, sixth, 52.24 per cent increase; Dudley, seventh, 8.57 per cent increase; Southbridge, eighth, 7.82 per cent increase; Methuen, ninth, 8.62 per cent decrease; and Northbridge, tenth, 24.95 per cent increase. In the aggregate, the value of textile goods made shows a decrease of 1.82 per cent.

In the following table is shown for certain cities the value of product in 1898 under the system of classification adopted in this report:

*Value of Goods Made. Selected Cities. 1898.*

CITIES AND INDUSTRIES.	Value of Goods Made 1898	CITIES AND INDUSTRIES.	Value of Goods Made 1898
<b>FALL RIVER.</b>	\$30,230,954	<b>LOWELL — Con.</b>	
Cordage and twine, . . .	283,544	Woollen goods (woven) and yarn, . . .	\$2,641,266
Cotton goods (woven), . . .	21,119,993	Worsted goods, . . .	1,567,810
Cotton yarn and thread, . . .	2,495,782	Other textile goods, . . .	2,181,266
Print works, dye works, and bleacheries, . . .	5,489,433	<b>NEW BEDFORD.</b>	\$11,209,933
Other textile goods, . . .	842,202	Cotton goods (woven), . . .	6,173,259
<b>FITCHBURG.</b>	\$4,848,745	Cotton yarn and thread, . . .	4,628,253
Cotton goods (woven), . . .	1,497,764	Other textile goods, . . .	408,421
Cotton yarn and thread, . . .	745,713	<b>TAUNTON.</b>	\$3,813,515
Worsted goods, . . .	2,460,707	Cotton goods (woven), . . .	1,618,551
Other textile goods, . . .	144,561	Cotton yarn and thread, . . .	1,993,277
<b>LAWRENCE.</b>	\$26,303,813	Other textile goods, . . .	201,687
Cotton goods (woven), . . .	4,340,987	<b>WORCESTER.</b>	\$3,972,196
Woollen goods (woven) and yarn, . . .	3,570,643	Cotton goods (woven), . . .	242,953
Worsted goods, . . .	14,438,354	Cotton yarn and thread, . . .	428,006
Other textile goods, . . .	3,953,829	Woollen goods (woven) and yarn, . . .	1,391,714
<b>LOWELL.</b>	\$24,123,206	Other textile goods, . . .	1,909,523
Cotton goods (woven), . . .	15,738,674		
Hosiery and knit goods, . . .	2,004,190		

The principal product in Fall River is Cotton Goods (Woven) the value manufactured in 1898 being \$21,119,993, or 69.86



per cent of all the textile goods manufactured in that city. In Fitchburg, Worsted Goods leads in value of product and the same is true of Lawrence. Cotton Goods (Woven) is the leading article of textile manufacture in Lowell and New Bedford; Cotton Yarn and Thread, in Taunton; and Woollen Goods (Woven) and Yarn, in Worcester.

In the following table is shown the number of establishments and the value of goods made in 1898:

*Value of Goods Made. All Textiles. 1898.*

INDUSTRIES.	Number of Establishments	Value of Goods Made 1898	Percentages of All Textiles
<b>All Textiles.</b>	500	\$193,376,168	100.00
Carpetings (textile), . . . . .	8	5,298,216	2.74
Cordage and twine, . . . . .	23	4,917,489	2.54
Cotton goods:			
Cotton goods (woven), . . . . .	128	78,123,894	37.82
Cotton yarn and thread, . . . . .	42	14,561,532	7.58
Cotton waste, . . . . .	10	2,016,904	1.04
Flax, hemp, and jute goods, . . . . .	9	3,451,650	1.79
Hosiery and knit goods, . . . . .	43	5,183,760	2.68
Print works, dye works, and bleacheries, . . . . .	35	20,531,893	10.62
Silk and silk goods, . . . . .	13	4,629,757	2.39
Woollen goods:			
Woven goods and yarn, . . . . .	137	33,015,451	17.07
Shoddy, waste, etc., . . . . .	16	719,342	0.37
Worsted goods, . . . . .	36	25,928,280	13.41

Cotton Goods (Woven) represents over one-third; Woollen Goods (Woven) and Yarn, nearly one-fifth; and Worsted Goods about one-eighth of the value of all textile products.

### *Imports and Exports.*

In the following table is reproduced from the Review of the World's Commerce for the year 1898, issued by the Bureau of Foreign Commerce of the Department of State, the description and value of the unmanufactured and manufactured textile materials and fabrics, imported into the United States during the years 1897 and 1898, with the increase or decrease in the latter year as compared with the former year, expressed in amounts and percentages:

*Imports of Unmanufactured and Manufactured Merchandise. 1897, 1898.*

ARTICLES.	VALUE OF IMPORTS OF MERCHANDISE		INCREASE (+) OR DECREASE (-) IN 1898	
	1897	1898	Amounts	Percentages
<b>Unmanufactured.</b>				
Cotton, . . . . .	\$6,343,961	\$4,691,786	—\$1,652,226	—26.04
Raw (in bales), . . . . .	6,343,961	4,612,385	—1,731,576	—27.29
Waste or flocks, . . . . .	—	79,351	+79,351	—
Fibers, etc., . . . . .	13,067,445	17,027,079	+3,959,634	+30.30
Flax, and tow of, . . . . .	1,858,141	1,206,526	—651,615	—35.07
Hemp, and tow of, . . . . .	572,438	570,292	—2,146	—0.37
Isle or Tampico fiber, . . . . .	186,837	333,426	+146,589	+78.46
Jute and jute butts, . . . . .	1,982,574	2,691,390	+708,816	+39.26
Manila, . . . . .	3,698,126	4,164,339	+466,213	+12.61
Sisal grass, . . . . .	4,144,365	7,599,146	+3,454,781	+83.36
All other, . . . . .	674,964	461,900	—213,064	—31.56
Silk, . . . . .	29,520,394	27,173,174	—2,347,220	—7.96
Cocoons, . . . . .	690	3,986	+3,296	+477.68
Raw or as reeled from the cocoons, . . . . .	28,864,138	26,586,134	—2,278,004	—7.89
Waste, . . . . .	655,666	583,054	—72,512	—11.06
Wool,* . . . . .	53,431,930	11,586,576	—41,845,354	—78.32
Class 1, clothing, . . . . .	33,953,828	4,639,220	—29,314,608	—86.34
In the grease, . . . . .	28,018,492	4,638,325	—23,380,167	—83.45
Scoured, . . . . .	5,935,336	895	—5,934,441	—99.98
Class 2, combing, . . . . .	6,946,102	301,337	—6,644,765	—95.66
In the grease, . . . . .	6,892,166	301,323	—6,590,843	—95.63
Scoured, . . . . .	53,936	14	—53,922	—99.97
Class 3, carpet, . . . . .	12,532,000	6,646,019	—5,885,981	—46.97
In the grease, . . . . .	12,393,452	6,645,872	—5,747,580	—46.38
Scoured, . . . . .	138,548	147	—138,401	—99.89
<b>Manufactured.</b>				
Cotton goods, . . . . .	\$32,198,652	\$29,390,228	—\$2,808,424	—8.72
Cloth, . . . . .	5,009,665	5,814,778	+805,113	+16.07
Not bleached, dyed, colored, etc., . . . . .	171,750	103,494	—68,256	—39.74
Bleached, dyed, colored, etc., . . . . .	4,837,915	5,711,284	+873,369	+18.05
Clothing (ready made), etc., . . . . .	1,936,185	936,954	—999,231	—51.61
Knit goods (stockings, hose, etc.), . . . . .	4,976,757	4,606,302	—370,455	—7.44
Laces, edgings, embroideries, etc., . . . . .	12,225,405	12,948,788	+723,383	+5.92
Thread (not on spools), yarn, warps, etc., . . . . .	660,417	766,371	+105,954	+16.04
All other manufactures of, . . . . .	7,390,223	4,317,035	—3,073,188	—41.68
Fibers, etc., . . . . .	29,220,029	24,929,377	—4,290,652	—14.68
Bagging, gunny cloth, etc., . . . . .	405,414	701,727	+296,313	+73.09
Bags for grain made of burlaps, . . . . .	1,666,560	—	—1,666,560	—100.00
Bags of jute, . . . . .	76,541	729,607	+653,066	+853.22
Burlaps, . . . . .	8,446,412	3,186,179	—5,310,233	—62.87
Cables, cordage, thread, and twine, . . . . .	50,781	70,120	+19,339	+38.08
Coir yarn, . . . . .	82,887	139,117	+56,230	+67.84
Twine, binding . . . . .	78,228	61,998	—16,230	—20.75
Carpets and carpeting, . . . . .	—	36,228	+36,228	—

\* Includes hair of the camel, goat, and alpaca.

*Imports of Unmanufactured and Manufactured Merchandise. 1897, 1898*  
— Concluded.

ARTICLES.	VALUE OF IMPORTS OF MERCHANDISE		INCREASE (+) OR DECREASE (—) IN 1898	
	1897	1898	Amounts	Percent-ages
<b>Fibers, etc.— Con.</b>				
Fabrics (woven of single jute yarn), . . . . .	-	\$3,945,782	+\$3,945,782	-
Handkerchiefs, . . . . .	-	1,042,374	+1,042,374	-
Oil-cloths, . . . . .	-	75,323	+75,323	-
Yarns, . . . . .	\$463,970	393,636	-70,334	-15.16
All other manufactures of, . . . . .	17,940,286	14,597,286	-3,351,950	-18.67
<b>Silk and silk goods, . . . . .</b>	<b>25,248,400</b>	<b>25,284,641</b>	<b>+36,232</b>	<b>+0.14</b>
Clothing (ready made) and other wear- ing apparel, . . . . .	2,348,024	1,591,395	-756,629	-32.22
Dress and piece goods, . . . . .	8,174,542	12,588,258	+4,413,716	+53.99
Laces and embroideries, . . . . .	2,595,103	3,258,348	+663,254	+25.56
Ribbons, . . . . .	1,480,061	1,950,193	+470,132	+31.76
Spun (in skeins, cops, warps, or on beams), . . . . .	1-	885,295	+885,295	-
Velvet, plush, and other pile fabrics, . . . . .	1-	982,173	+982,173	-
All other manufactures of, . . . . .	10,650,679	4,028,979	-6,621,700	-62.17
<b>Wool and woollen goods,* . . . . .</b>	<b>40,431,831</b>	<b>15,206,365</b>	<b>-25,225,466</b>	<b>-62.39</b>
Carbonized, . . . . .	13,513	-	-13,513	-100.00
Carpets and carpeting, . . . . .	1,063,154	2,035,836	+972,682	+91.49
Clothing, etc. (except shawls and knit fabrics), . . . . .	880,428	809,249	-71,179	-8.08
Cloths, . . . . .	13,654,931	3,876,368	-9,778,563	-71.61
Dress goods (women's and children's), . . . . .	13,553,243	6,901,282	-6,651,961	-49.08
Knit fabrics, . . . . .	1,478,642	618,549	-860,093	-58.17
Rags, nolls, and waste, . . . . .	4,488,146	-	-4,488,146	-100.00
Shoddy, mungo, flocks, etc., . . . . .	1,946,108	92,603	-1,853,505	-95.24
Shawls, . . . . .	261,668	56,145	-205,523	-78.54
Yarn, . . . . .	812,782	162,161	-650,621	-80.05
All other manufactures of, . . . . .	2,279,216	654,172	-1,625,044	-71.30

\* Included in "all other manufactures of silk" prior to July, 1898.

\* Includes goods made from wool, and hair of the camel, goat, and alpaca.

Of the unmanufactured materials imported, raw cotton shows a decrease in 1898 as against 1897, of \$1,731,576, or 27.29 per cent; raw silk (or as reeled from the cocoons) a decrease in value of \$2,278,004, or 7.89 per cent; and of all classes of wool and hair, a decrease of \$41,845,354, or 78.32 per cent. Fibers, etc., exhibits an increase in value imported in 1898 of \$3,959,634, or 30.30 per cent; the increase being mainly due to the increased importation of Sisal grass, the value of which was \$4,144,365 in 1897, and \$7,599,146 in 1898, an increase in the latter year of \$3,454,781, or 83.36 per cent. Of

the manufactured goods, a decrease in the value imported is found in Cotton Goods in the aggregate, of \$2,808,424, or 8.72 per cent; Wool and Woollen Goods, a decrease of \$25,-225,466, or 62.39 per cent; and Fibers, etc., a decrease of \$4,-290,652, or 14.68 per cent. A net increase of \$36,232, or 0.14 per cent is shown for Silk and Silk Goods in the aggregate, in 1898 as compared with 1897, although the value of dress and piece goods increased over 50 per cent (53.99) in 1898.

The following table, drawn from the same source as the one preceding, shows the value of the exports of raw and manufactured merchandise for 1897 and 1898:

*Exports of Unmanufactured and Manufactured Merchandise. 1897, 1898.*

ARTICLES.	VALUE OF EXPORTS OF MERCHANDISE		INCREASE (+) OR DECREASE (-) IN 1898	
	1897	1898	Amounts	Percentages
<b>Unmanufactured.</b>				
Cotton, . . . . .	\$212,930,894	\$233,323,511	+\$20,392,617	+9.58
Sea Island, . . . . .	3,111,547	2,844,073	-267,474	-8.60
Upland and other, . . . . .	209,634,029	229,924,131	+20,290,102	+9.68
Waste, . . . . .	185,318	555,307	+369,989	+199.65
Wool, . . . . .	144,608	14,406	-130,202	-90.04
<b>Manufactured.</b>				
Cotton goods, . . . . .	\$18,518,935	\$19,594,480	+\$1,075,545	+5.81
Cloth, . . . . .	14,812,343	15,506,376	+693,533	+4.68
Colored, . . . . .	4,528,787	4,625,931	+97,144	+2.15
Uncolored, . . . . .	10,284,056	10,880,445	+596,389	+5.80
Wearing apparel, . . . . .	905,259	1,089,731	+184,472	+20.38
Waste, cop and mill . . . . .	130,574	281,319	+150,745	+115.45
All other manufactures of, . . . . .	2,670,259	2,717,054	+46,795	+1.75
Fibers, etc., . . . . .	2,215,599	2,662,592	+446,993	+20.17
Bags, . . . . .	536,477	528,729	-7,748	-1.44
Cordage, . . . . .	580,787	569,898	-10,844	-1.87
Twine, . . . . .	801,976	1,217,897	+415,921	+51.86
All other manufactures of, . . . . .	296,409	346,073	+49,664	+16.76
Silk goods, . . . . .	237,455	308,060	+70,625	+29.74
Woollen goods, . . . . .	1,058,956	1,020,810	-38,146	-3.60
Carpets, . . . . .	214,790	96,938	-117,852	-54.87
Dress goods, . . . . .	17,510	31,949	+14,439	+82.46
Flannels and blankets, . . . . .	54,888	48,598	-6,290	-11.46
Wearing apparel, . . . . .	409,287	456,537	+47,250	+11.54
All other manufactures of, . . . . .	362,481	386,788	+24,307	+6.71

An increase is noted in the above table of \$20,290,102, or 9.68 per cent, in the value of Upland and other raw cotton exported in 1898 and a decrease of \$267,474, or 8.60 per cent,

in the value of Sea Island cotton. The value of domestic wool exported decreased 90.04 per cent, the value in 1897 being \$144,608 and in 1898, \$14,406. Of the manufactured merchandise exported, an increase of 5.81 per cent is found in Cotton Goods in the aggregate, 20.17 per cent in Fibers, etc., 29.74 per cent in Silk, and a decrease of 3.60 per cent in Wool.

In the following table is shown the countries from which the unmanufactured and manufactured merchandise was imported :

*Imports and Countries. 1897, 1898.*

ARTICLES AND COUNTRIES FROM WHICH IMPORTED.	VALUE OF IMPORTS OF MERCHANDISE		INCREASE (+) OR DECREASE (−) IN 1898	
	1897	1898	Amounts	Percent-ages
<b>Unmanufactured.</b>				
<b>Cotton :</b>				
United Kingdom, . . . . .	\$1,830,023	\$1,157,047	—\$672,976	—36.77
Other Europe, . . . . .	2,103	1,963	—140	—6.66
South America, . . . . .	78,348	158,880	+80,482	+102.72
East Indies, . . . . .	5,534	13,076	+7,542	+136.23
Other Asia and Oceania, . . . .	22,041	357,473	+335,432	+1,521.85
Africa (Egypt), . . . . .	4,306,531	2,911,534	—1,484,997	—33.78
Other countries, . . . . .	9,381	12,462	+3,081	+32.84
<b>Flax :</b>				
United Kingdom, . . . . .	784,808	531,981	—252,827	—32.22
Other Europe, . . . . .	670,526	593,532	—76,994	—11.48
British North America, . . . .	402,807	81,013	—321,794	—79.80
<b>Jute :</b>				
United Kingdom, . . . . .	138,117	189,700	+51,583	+37.35
East Indies, . . . . .	1,731,202	2,486,325	+755,123	+43.56
Other countries, . . . . .	63,255	16,365	—46,890	—74.13
<b>Manila :</b>				
United Kingdom, . . . . .	254,924	1,145,821	+890,897	+349.43
Philippine Islands, . . . . .	3,404,491	2,797,254	—607,237	—17.84
Other countries, . . . . .	38,711	221,264	+182,553	+471.58
<b>Sisal grass :</b>				
Mexico, . . . . .	4,110,382	7,383,878	+3,273,496	+79.64
Other countries, . . . . .	33,983	215,268	+181,285	+533.46
<b>Silk (raw) :</b>				
France, . . . . .	976,677	1,174,747	+198,070	+20.28
Italy, . . . . .	4,474,447	7,134,094	+2,659,647	+59.44
China, . . . . .	7,271,982	4,560,750	—2,711,232	—37.28
Japan, . . . . .	15,838,977	12,505,440	—3,333,537	—21.05
Other countries, . . . . .	302,055	1,211,103	+909,048	+300.95
<b>Wool* (class 1, clothing) :</b>				
United Kingdom, . . . . .	19,039,491	1,235,365	—17,804,126	—93.51
France, . . . . .	3,870,596	14,034	—3,856,562	—99.64
South America, . . . . .	4,906,323	513,457	—4,392,866	—89.53

\* Includes hair of the camel, goat, and alpaca.

*Imports and Countries. 1897, 1898 — Continued.*

ARTICLES AND COUNTRIES FROM WHICH IMPORTED.	VALUE OF IMPORTS OF MERCHANDISE		INCREASE (+) OR DECREASE (—) IN 1898	
	1897	1898	Amounts	Percentages
<b>Wool* (class 1, clothing) — <i>Con.</i></b>				
Asia and Oceania, . . . . .	\$3,114,322	\$2,625,479	—\$488,843	—15.70
Other countries, . . . . .	3,023,096	250,885	—2,772,211	—91.70
<b>Wool* (class 2, combing):</b>				
United Kingdom, . . . . .	4,421,700	254,253	—4,167,447	—94.25
Other Europe, . . . . .	172,792	24,398	—148,394	—85.88
British North America, . . . . .	1,150,291	2,728	—1,147,563	—99.76
South America, . . . . .	1,183,201	19,126	—1,164,075	—98.38
Asia and Oceania, . . . . .	3,639	—	—3,639	—100.00
Other countries, . . . . .	14,479	832	—13,647	—94.25
<b>Wool* (class 3, carpet):</b>				
United Kingdom, . . . . .	4,942,671	2,011,995	—2,930,676	—59.29
France, . . . . .	1,166,465	249,889	—916,576	—78.58
Germany, . . . . .	280,495	82,219	—198,276	—70.69
Other Europe, . . . . .	2,237,187	1,561,773	—675,414	—30.19
British North America, . . . . .	4,108	135	—3,973	—96.71
South America, . . . . .	1,283,684	857,399	—426,285	—33.21
China, . . . . .	1,845,290	1,422,858	—422,432	—22.89
Other Asia and Oceania, . . . . .	769,165	423,836	—340,329	—44.25
Other countries, . . . . .	2,935	30,915	+27,980	+953.32
<b>Manufactured.</b>				
<b>Cotton cloths:</b>				
United Kingdom, . . . . .	\$3,719,054	\$4,458,510	+\$739,456	+19.88
France, . . . . .	557,114	565,425	+8,311	+1.49
Germany, . . . . .	439,699	569,567	+129,898	+29.54
Switzerland, . . . . .	281,093	174,340	—106,753	—37.98
Other Europe, . . . . .	5,618	40,698	+35,080	+624.42
Japan, . . . . .	5,971	5,136	—835	—13.98
Other countries, . . . . .	1,146	1,102	—44	—3.84
<b>Cotton (other manufactures of):</b>				
United Kingdom, . . . . .	9,979,293	6,740,784	—3,238,509	—32.45
Belgium, . . . . .	870,674	287,724	—582,950	—66.95
France, . . . . .	3,217,063	3,510,422	+293,359	+9.12
Germany, . . . . .	8,384,669	7,113,110	—1,271,559	—15.17
Switzerland, . . . . .	5,032,871	5,707,371	+674,500	+13.40
Other Europe, . . . . .	80,093	95,365	+15,272	+19.07
China, . . . . .	25,483	30,946	+5,463	+21.44
Japan, . . . . .	49,865	31,476	—18,389	—36.88
Other Asia and Oceania, . . . . .	24,657	23,987	—670	—2.72
Other countries, . . . . .	24,319	34,265	+9,946	+40.90
<b>Silk goods:</b>				
United Kingdom, . . . . .	1,181,428	2,682,768	+1,501,340	+127.08
Austria-Hungary, . . . . .	129,728	172,910	+43,182	+33.29
Belgium, . . . . .	32,856	36,352	+3,496	+10.64
France, . . . . .	11,928,540	10,676,467	—1,252,073	—10.50
Germany, . . . . .	4,851,886	4,698,051	—153,835	—3.17

\* Includes hair of the camel, goat, and alpaca.

*Imports and Countries. 1897, 1898 — Concluded.*

ARTICLES AND COUNTRIES FROM WHICH IMPORTED.	VALUE OF IMPORTS OF MERCHANDISE		INCREASE (+) OR DECREASE (—) IN 1898	
	1897	1898	Amounts	Percentages
<b>Silk goods — <i>Con.</i></b>				
Italy, . . . . .	\$323,692	\$368,089	+\$44,397	+13.72
Switzerland, . . . . .	3,499,381	3,797,257	+297,896	+8.51
Other Europe, . . . . .	43,960	46,725	+2,765	+6.29
China, . . . . .	126,292	145,686	+19,344	+15.32
Japan, . . . . .	2,375,631	2,707,107	+331,476	+13.95
Other countries, . . . . .	55,036	53,279	—1,757	—3.19
<b>Carpets (woollen) :</b>				
United Kingdom, . . . . .	533,864	558,405	+24,541	+4.60
Other Europe, . . . . .	276,092	1,096,174	+820,082	+297.03
Japan, . . . . .	10,576	17,351	+6,775	+64.06
Other Asia and Oceania, . . . . .	210,836	246,867	+35,531	+16.85
Other countries, . . . . .	1,786	117,539	+115,753	+6,481.13
<b>Cloth (woollen) :</b>				
United Kingdom, . . . . .	10,667,180	2,677,975	—7,989,205	—74.90
Austria-Hungary, . . . . .	153,472	68,894	—84,578	—55.11
Belgium, . . . . .	345,686	93,803	—252,883	—73.01
France, . . . . .	341,117	206,243	—135,874	—39.83
Germany, . . . . .	2,130,046	820,493	—1,309,553	—61.48
Other Europe, . . . . .	8,160	5,299	—2,861	—35.06
Other countries, . . . . .	9,270	5,161	—4,109	—44.33
<b>Dress goods (woollen) :</b>				
United Kingdom, . . . . .	4,644,136	2,492,359	—2,151,776	—46.33
France, . . . . .	5,666,049	2,104,487	—3,561,562	—62.86
Germany, . . . . .	3,101,953	2,281,056	—820,897	—26.46
Other Europe, . . . . .	140,608	22,654	—117,954	—83.89
Other countries, . . . . .	498	726	+228	+45.78

Considering the importation of raw cotton, we find that an increase in value is shown for South America of 102.72 per cent; East Indies, 136.28 per cent; other Asia and Oceania, 1,521.85 per cent; and other countries, 32.84 per cent. Decreases in value of raw cotton imported are shown for the United Kingdom of 36.77 per cent; other Europe, 6.66 per cent; and Egypt, 33.78 per cent. Less flax, according to value, was imported in 1898 than in 1897, each of the three sections showing decreases. Jute shows an increase in 1898 over 1897, in the value imported from the United Kingdom and from the East Indies, but a decrease in value from the other countries. Owing to the complications with Spain, the value of Manila imported from the Philippine Islands shows a decrease of 17.84 per cent, but an increase in value of the amount imported from

the United Kingdom of 349.48 per cent and an increase of 471.58 per cent imported from other countries. A considerable increase in the value of Sisal grass imported from Mexico is seen, the total being \$3,273,496, an increase of 79.64 per cent, while that imported from other countries, although of slight value, shows an increase of over five hundred per cent (533.46). The value of raw silk imported shows an increase for France, Italy, and other countries and a decrease for China and Japan. Decreases in the value of all classes of wool imported are found for all the countries mentioned, except in carpet wool imported from the countries other than those mentioned in detail, which shows an increase of 953.32 per cent; the total value, however, was exceedingly small as compared with the other countries named.

The largest value of cotton cloths imported is shown for the United Kingdom, the value in 1897 being \$3,719,054, and in 1898, \$4,458,510, an increase of 19.88 per cent. The United Kingdom, France, Germany, and Switzerland sent the largest values in other manufactures of cotton in both years; the United Kingdom and Germany exhibiting decreases in 1898 as against 1897, and the other two countries increases. The largest value of silk goods imported is found to be in France, the amount being, in 1897, \$11,928,540 falling, in 1898, to \$10,676,467, a decrease of \$1,252,073, or 10.50 per cent. The silk imports from Germany are valued at nearly five million dollars and a decrease is shown in the value of importations in 1898 as against 1897 of 5.23 per cent. Switzerland shows a gain of 8.51 per cent, Japan a gain of 13.95 per cent, and the United Kingdom, a gain of 127.08 per cent. The United Kingdom sends the greatest value of carpets to this country, the value in 1898 being \$558,405, an increase over the preceding year of 4.60 per cent. From other European countries the value imported in 1897 was \$276,092, and in 1898, \$1,096,174, a material increase, the percentage being 297.03. The United Kingdom also sends the largest value of manufactured woollen cloth, the value of the importations for 1897 being \$10,667,180 falling in 1898 to \$2,677,975, a decrease of 74.90 per cent. Germany ranks second with an import value of \$2,130,046 in 1897 and \$820,493 in 1898; this was a decrease of \$1,309,553, or 61.48 per cent. The importations in 1898 of woollen dress



goods from the United Kingdom, Germany, and France were nearly equal in value, aggregating in each country over two million dollars, but in 1897, France ranked first, the United Kingdom, second, and Germany, third. The decrease in value of imports was in France, 62.86 per cent; United Kingdom, 46.33 per cent; and Germany, 26.46 per cent.

The following table exhibits the value of the exports of unmanufactured and manufactured merchandise by countries to which exported:

*Exports and Countries. 1897, 1898.*

ARTICLES AND COUNTRIES TO WHICH EXPORTED.	VALUE OF EXPORTS OF MERCHANDISE		INCREASE (+) OR DECREASE (—) IN 1898	
	1897	1898	Amounts	Percentages
<b>Unmanufactured.</b>				
Cotton (raw):				
United Kingdom, . . . . .	\$96,197,355	\$115,308,684	+\$20,111,329	+21.13
France, . . . . .	25,721,782	22,229,030	—3,492,752	—13.58
Germany, . . . . .	52,235,674	53,861,674	+1,626,000	+3.11
Other Europe, . . . . .	30,855,518	30,899,213	+43,595	+0.14
British North America, . . . .	3,583,924	3,038,787	—545,137	—15.21
Mexico, . . . . .	1,150,894	1,193,835	+42,941	+3.73
South America, . . . . .	753	—	—753	—100.00
Japan, . . . . .	3,892,012	5,839,708	+1,947,696	+50.04
Other Asia and Oceania, . . . .	106,850	397,136	+290,286	+271.68
Other countries, . . . . .	764	137	—627	—82.07
Wool (raw):				
United Kingdom, . . . . .	975	100	—875	—89.74
Other Europe, . . . . .	769	1,600	+831	+108.06
British North America, . . . .	112,365	10,119	—102,246	—90.99
Mexico, . . . . .	30,459	2,587	—27,872	—91.51
Other countries, . . . . .	40	—	—40	—100.00
<b>Manufactured.</b>				
Cotton (cloth):				
United Kingdom, . . . . .	\$692,820	\$712,829	+\$20,509	+2.96
France, . . . . .	29,284	4,113	—25,171	—85.93
Germany, . . . . .	80,975	31,287	—49,788	—61.42
Other Europe, . . . . .	77,451	86,477	+9,026	+11.65
British North America, . . . .	853,233	959,207	+105,974	+12.42
Central American States and British Honduras, . . . . .	451,450	484,588	+33,138	+7.34
Mexico, . . . . .	378,994	449,076	+70,082	+18.49
Santo Domingo, . . . . .	91,466	145,487	+54,021	+59.06
Cuba, . . . . .	17,916	64,478	+46,562	+259.89
Porto Rico, . . . . .	4,010	6,768	+2,758	+68.78
Other West Indies and Bermuda, .	873,894	803,019	—70,875	—8.11
Argentina, . . . . .	158,202	200,281	+42,079	+26.60
Brazil, . . . . .	546,504	633,130	+86,626	+15.85
Colombia, . . . . .	349,725	313,727	—35,998	—10.29

*Exports and Countries. 1897, 1898 — Concluded.*

ARTICLES AND COUNTRIES TO WHICH EXPORTED.	VALUE OF EXPORTS OF MERCHANDISE		INCREASE (+) OR DECREASE (—) IN 1898	
	1897	1898	Amounts	Percent- ages
<b>Cotton (cloth) — <i>Con.</i></b>				
Other South America, . . . . .	\$1,121,055	\$1,402,039	+\$280,984	+25.06
China, . . . . .	6,478,296	6,944,520	+466,224	+7.20
British East Indies, . . . . .	545,567	363,137	—182,430	—33.44
Hong Kong, . . . . .	23,304	45,882	+22,578	+96.88
Japan, . . . . .	141,496	45,948	—95,548	—67.53
British Australasia, . . . . .	88,002	154,804	+66,802	+75.91
Other Asia and Oceania, . . . . .	986,379	1,289,919	+303,540	+30.77
Africa, . . . . .	816,052	360,922	—455,130	—55.77
Other countries, . . . . .	7,318	4,788	—2,530	—34.57
<b>Cotton (other manufactures of) :</b>				
United Kingdom, . . . . .	431,306	415,014	—16,292	—3.78
France, . . . . .	8,520	8,331	—189	—2.22
Germany, . . . . .	236,887	194,474	—42,413	—17.90
Other Europe, . . . . .	62,226	84,720	+22,494	+36.15
British North America, . . . . .	1,537,471	1,778,441	+240,970	+15.67
<b>Central American States and British</b>				
Honduras, . . . . .	206,556	215,750	+9,194	+4.45
Mexico, . . . . .	309,980	359,841	+49,861	+16.09
Santo Domingo, . . . . .	22,471	23,609	+1,138	+5.06
Cuba, . . . . .	15,621	25,396	+9,775	+62.58
Porto Rico, . . . . .	2,995	4,133	+1,138	+38.00
Other West Indies and Bermuda, . . . . .	85,984	103,551	+17,567	+20.43
Argentina, . . . . .	43,820	56,897	+13,077	+29.84
Brazil, . . . . .	57,247	49,525	—7,722	—13.49
Colombia, . . . . .	49,379	49,504	+125	+0.25
Other South America, . . . . .	43,951	41,488	—2,463	—5.60
China, . . . . .	19,167	17,604	—1,563	—8.15
British East Indies, . . . . .	2,161	2,831	+670	+31.00
Hong Kong, . . . . .	8,049	16,018	+7,969	+99.01
British Australasia, . . . . .	177,967	194,335	+16,368	+9.20
Other Asia and Oceania, . . . . .	318,297	358,354	+40,057	+12.58
Africa, . . . . .	58,813	82,174	+23,361	+39.72
Other countries, . . . . .	7,224	6,114	—1,110	—15.37

From the above table, it will be readily seen that the greater part of the raw cotton exported is sent to Europe, and that the United Kingdom receives the largest portion, the value of the exports thereto being, in 1897, \$95,197,355, and in 1898, \$115,308,684, an increase in the latter year of 21.13 per cent. Germany ranks second, the increase in the value of raw cotton exported thereto being 3.11 per cent. The decrease in exports to France was 13.58 per cent. Japan shows a gain of about 50 per cent (50.04) in the value of American cotton shipped to her ports, the value in 1898 being \$5,839,708. Our exports of

raw wool exhibit decreases in value exported to the United Kingdom, British North America, Mexico, and other countries outside of Europe in 1898 as against 1897, but the values exported in either year were not of large amount.

Of the manufactured cotton cloth made in this country, the largest value was exported to China, the amount being \$6,-478,296 in 1897 and \$6,944,520 in 1898, an increase of 7.20 per cent. The value of cotton cloth sent to British North America was \$853,233 in 1897 and \$959,207 in 1898, an increase of 12.42 per cent. The value of exports to the United Kingdom increased 2.96 per cent; Brazil, 15.85 per cent; Argentina, 26.60 per cent; Hong Kong, 96.88 per cent; British Australasia, 75.91 per cent; Mexico, 18.49 per cent; Santo Domingo, 59.06 per cent; Cuba, 259.89 per cent; and Porto Rico, 68.78 per cent. The value, while small in many instances, seems to indicate an increase in the exportation of cotton cloth.

In the following table we bring forward the exports and imports to and from the United Kingdom :

*Value of Imports and Exports. United Kingdom. 1897, 1898.*

ARTICLES.	1897		1898	
	Imports	Exports	Imports	Exports
<b>Imports and Exports.</b>	<b>\$62,136,688</b>	<b>\$96,321,956</b>	<b>\$26,136,963</b>	<b>\$116,436,627</b>
<i>Unmanufactured.</i>	<b>\$31,411,734</b>	<b>\$95,198,330</b>	<b>\$6,626,162</b>	<b>\$115,308,734</b>
Cotton, raw . . . . .	1,830,023	96,197,355	1,157,047	115,308,684
Fibers, . . . . .	1,177,349	-	1,867,502	-
Wool (all classes), . . . . .	28,403,862	975	3,501,613	100
<i>Manufactured.</i>	<b>\$30,724,954</b>	<b>\$1,123,626</b>	<b>\$19,610,801</b>	<b>\$1,127,843</b>
Cotton cloth, . . . . .	3,719,064	692,320	4,458,510	712,829
Cotton (other manufactures of), . . . . .	9,979,293	431,306	6,740,784	415,014
Silk goods, . . . . .	1,181,423	-	2,682,768	-
Woollen carpets, . . . . .	533,864	-	558,405	-
Woollen cloth, . . . . .	10,667,180	-	2,677,975	-
Woollen dress goods, . . . . .	4,644,136	-	2,492,359	-

From the above table, it is seen that the "balance of trade," upon the basis of *values*, so far as these textile materials and products are concerned, is in favor of the United States. The value of merchandise imported in 1897 from the United Kingdom was \$62,136,688 and the value of exports to the United Kingdom was \$96,321,956, a balance in favor of the United States of \$34,185,268, or 55.02 per cent. In 1898, the value

of textile imports was \$26,136,963, and of textile exports \$116,-436,627; a balance in favor of the United States of \$90,299,-664, or 345.49 per cent. The increase in this balance in 1898 as compared with 1897 was \$56,114,396, or 164.15 per cent.

The value of the cotton crop in the United States for the commercial year ending August 31, 1898, was \$319,491,412 and the value of the cotton exported during the fiscal year ending June 30, 1898, was \$230,442,215, while the value exported for the calendar year ending December 31, 1898, was, as given in the table on page 243, \$233,323,511.

### *Production of Cotton and Wool.*

There are no available statistics showing the annual production of cotton in the various countries of the world except for the United States, India, and Egypt. The figures in the following table for the United States, India, and Egypt have been furnished by the Department of Agriculture and are for the commercial year ending August 31, 1898. Those for China are estimates of the United States Consul-General of China, and those for the other countries are from Circular No. 1 of the Department of Agriculture issued in 1896:

#### *Production of Cotton.*

COUNTRIES.	Average Weight per Bale	Number of Bales
United States, . . . . .	*482	10,897,857
India, . . . . .	400	2,344,000
China, . . . . .	500	1,320,000
Egypt, . . . . .	735	843,211
Korea, . . . . .	500	400,000
Asiatic Russia, . . . . .	500	300,000
Brazil, . . . . .	500	224,800
Africa, . . . . .	500	100,000
Turkey, . . . . .	500	98,800
Japan, . . . . .	500	73,200
Mexico, . . . . .	500	64,000
Peru and the West Indies, . . . . .	500	46,400
Persia, . . . . .	500	32,800
Greece, . . . . .	500	7,780
Java, . . . . .	500	5,200
Malta, . . . . .	500	3,680
Tahiti, . . . . .	500	920
Italy, . . . . .	500	456
Fiji Islands, . . . . .	500	440

\* Net weight.

Siam is also a cotton-producing country but to what extent is unknown. Anam and other French Indian provinces also produce cotton but the quantity is not known officially; in 1897, Japan imported from these French colonies 2,191,200 pounds, or on the basis of 500 pounds each, 4,382 bales, while in 1896 Siam exported to Japan 115,536 pounds of raw cotton.

The following table prepared by Latham, Alexander, & Co. of New York, gives the consumption in bales of 500 pounds each in the United States and other countries:

*Consumption of Cotton. 1896-97, 1897-98.*

COUNTRIES.	NUMBER OF BALES (500 lbs. each)		INCREASE IN 1897-98	
	1896-97	1897-98	Amounts	Percent- ages
United States, . . . . .	2,738,000	2,962,000	224,000	8.18
Great Britain, . . . . .	3,224,000	3,380,000	156,000	4.84
Continent of Europe, . . . . .	4,368,000	4,676,000	208,000	4.76
India, . . . . .	1,004,000	1,058,000	54,000	5.38
TOTALS, . . . . .	11,334,000	11,976,000	642,000	5.66

Consumption increased 8.18 per cent in the United States, 4.84 per cent in Great Britain, 4.76 per cent on the Continent of Europe, and 5.38 per cent in India.

The next table gives the total cotton crop for the United States from 1791 to 1898, inclusive. The figures are taken from Bulletin No. 9, Miscellaneous Series, and other reports of the Department of Agriculture, and show the production, consumption, and exportation of cotton, and are for each commercial year beginning September 1 and ending August 31.

*Production, Consumption, and Exportation of Cotton. 1791-1898.*

YEARS.	NUMBER OF POUNDS OF RAW COTTON		
	Production (Crop)	Consumption	Exported
1791, . . . . .	2,000,025	-	200,025
1792, . . . . .	2,999,925	-	142,875
1793, . . . . .	4,999,950	-	499,950
1794, . . . . .	8,000,100	-	1,666,575
1795, . . . . .	8,000,100	-	6,259,950
1796, . . . . .	9,999,900	-	6,106,725
1797, . . . . .	11,000,025	-	3,788,325
1798, . . . . .	15,000,075	-	9,360,000
1799, . . . . .	20,000,025	-	9,532,350

*Production, Consumption, and Exportation of Cotton. 1791-1898 — Con.*

YEARS.	NUMBER OF POUNDS OF RAW COTTON		
	Production (Crop)	Consumption	Exported
1800, . . . . .	35,000,100	8,000,100	17,789,850
1801, . . . . .	47,999,928	9,000,072	20,911,248
1802, . . . . .	54,999,984	-	27,501,132
1803, . . . . .	60,000,038	-	37,712,062
1804, . . . . .	65,000,070	-	35,034,120
1805, . . . . .	70,000,872	11,000,073	38,371,149
1806, . . . . .	79,999,980	-	35,657,360
1807, . . . . .	79,999,920	-	63,941,360
1808, . . . . .	74,999,964	-	10,630,416
1809, . . . . .	81,999,904	-	50,990,240
1810, . . . . .	85,000,000	16,000,000	93,261,500
1811, . . . . .	79,999,920	16,999,988	62,068,150
1812, . . . . .	74,999,988	-	28,887,288
1813, . . . . .	74,999,988	-	19,110,018
1814, . . . . .	70,000,038	-	17,728,974
1815, . . . . .	99,999,900	24,750,000	82,998,860
1816, . . . . .	124,000,116	-	81,947,148
1817, . . . . .	130,000,026	-	85,649,322
1818, . . . . .	125,000,091	-	92,471,292
1819, . . . . .	167,000,120	-	87,997,000
1820, . . . . .	160,000,104	-	127,860,216
1821, . . . . .	179,999,996	-	124,893,446
1822, . . . . .	209,999,867	-	144,674,977
1823, . . . . .	184,999,890	-	178,723,272
1824, . . . . .	214,999,902	-	142,369,674
1825, . . . . .	254,999,888	-	176,449,988
1826, . . . . .	349,960,104	-	204,535,344
1827, . . . . .	316,860,011	49,489,796	282,674,000
1828, . . . . .	241,398,665	40,398,665	201,000,000
1829, . . . . .	296,811,515	40,528,873	252,340,000
1830, . . . . .	331,150,455	42,887,568	284,421,000
1831, . . . . .	354,246,827	62,110,422	263,593,000
1832, . . . . .	355,491,720	62,568,000	321,120,000
1833, . . . . .	374,653,300	68,044,200	303,450,000
1834, . . . . .	437,558,022	71,297,919	373,164,000
1835, . . . . .	460,338,376	79,597,896	375,441,000
1836, . . . . .	507,550,425	88,301,409	416,268,000
1837, . . . . .	539,669,470	84,342,660	443,051,000
1838, . . . . .	632,767,363	93,257,877	596,925,000
1839, . . . . .	522,444,268	105,990,912	412,416,000
1840, . . . . .	834,110,805	113,058,919	718,508,000
1841, . . . . .	644,171,876	117,131,472	517,519,000
1842, . . . . .	668,378,878	106,336,450	581,803,500
1843, . . . . .	972,959,875	132,977,761	822,090,000
1844, . . . . .	836,528,508	142,861,000	671,354,000
1845, . . . . .	993,718,745	161,435,000	864,735,500
1846, . . . . .	863,320,707	173,688,600	688,013,700
1847, . . . . .	766,598,581	184,468,000	534,957,200
1848, . . . . .	1,017,390,762	256,890,348	774,786,000
1849, . . . . .	1,249,984,968	280,123,460	971,408,000

*Production, Consumption, and Exportation of Cotton. 1791-1898—Con.*

YEARS.	NUMBER OF POUNDS OF RAW COTTON		
	Production (Crop)	Consumption	Exported
1850, . . . . .	1,001,185,022	263,190,642	682,195,800
1851, . . . . .	1,021,047,872	202,015,424	827,303,360
1852, . . . . .	1,338,060,680	295,150,084	1,045,880,488
1853, . . . . .	1,406,301,782	352,031,550	1,107,439,200
1854, . . . . .	1,322,240,970	317,011,480	997,233,640
1855, . . . . .	1,294,463,156	306,584,978	973,986,706
1856, . . . . .	1,535,833,940	326,650,380	1,240,934,520
1857, . . . . .	1,373,619,228	364,051,584	1,000,179,708
1858, . . . . .	1,439,743,838	263,238,404	1,144,981,110
1859, . . . . .	1,796,454,558	414,659,997	1,350,567,141
1860, . . . . .	2,241,055,612	450,877,823	1,739,893,753
1861, . . . . .	1,836,196,713	402,463,980	1,491,849,936
1862,* . . . . .	2,146,600,000	176,490,000	307,634,472
1863,* . . . . .	763,200,000	137,376,000	5,198,346
1864,* . . . . .	214,650,000	104,940,000	12,904,281
1865,* . . . . .	143,100,000	164,565,000	11,823,399
1866, . . . . .	1,000,768,356	293,750,100	685,606,894
1867, . . . . .	931,180,776	341,893,320	691,331,976
1868, . . . . .	1,121,201,580	403,453,020	736,838,120
1869, . . . . .	1,050,711,348	411,310,056	650,850,720
1870, . . . . .	1,373,922,440	380,670,400	970,851,200
1871, . . . . .	1,923,724,114	490,706,632	1,400,701,978
1872, . . . . .	1,317,637,493	548,137,190	867,090,102
1873, . . . . .	1,745,145,552	533,300,388	1,189,913,784
1874, . . . . .	1,851,652,272	579,838,492	1,261,395,564
1875, . . . . .	1,686,516,040	524,922,200	1,181,271,520
1876, . . . . .	2,056,746,972	600,230,280	1,436,004,336
1877, . . . . .	1,968,590,360	628,325,720	1,333,567,400
1878, . . . . .	2,148,239,250	670,059,900	1,512,114,300
1879, . . . . .	2,268,147,285	696,573,063	1,556,008,788
1880, . . . . .	2,615,608,408	812,650,012	1,763,791,362
1881, . . . . .	3,088,645,000	891,911,020	2,111,099,160
1882, . . . . .	2,455,221,600	884,040,750	1,612,179,900
1883, . . . . .	3,266,385,320	974,355,120	2,240,300,590
1884, . . . . .	2,639,498,400	867,027,546	1,809,460,422
1885, . . . . .	2,624,835,900	806,437,500	1,816,067,120
1886, . . . . .	3,044,544,933	1,001,257,872	2,007,661,989
1887, . . . . .	3,018,360,368	979,750,848	2,062,620,128
1888, . . . . .	3,290,871,011	1,054,134,349	2,161,043,434
1889, . . . . .	3,309,564,330	1,103,821,407	2,262,099,519
1890, . . . . .	3,494,811,916	1,142,878,402	2,345,367,706
1891, . . . . .	4,092,678,381	1,244,946,879	2,765,721,343
1892, . . . . .	4,273,734,267	1,360,748,158	2,806,515,701
1893, . . . . .	3,182,673,375	1,154,788,650	2,111,535,550
1894, . . . . .	3,578,613,258	1,099,532,112	2,506,458,438
1895, . . . . .	4,792,205,484	1,426,101,668	3,315,558,268
1896, . . . . .	3,415,841,838	1,194,871,644	2,242,754,307
1897, . . . . .	4,069,799,775	1,358,186,427	2,879,512,101
1898, . . . . .	5,252,767,074	1,659,806,042	3,686,672,918

\* Crop and consumption estimated.

In 1809, there were in the United States 87 mills, with 80,000 spindles, and an estimated capital of \$4,800,000; 48 of these mills were run by water power and the remaining number by horse power. During the decade ending in 1820 occurred the second war with England which caused a falling off in our exports to Great Britain. In 1825 occurred what was perhaps the first "bull movement" in the cotton market at Liverpool, when cotton advanced in price 110 per cent, followed in this country by an advance of 85 per cent. In 1837 occurred a great financial panic. In 1845, *Hunt's Magazine* stated that "the supply of cotton in the United States, including Texas, is far beyond the wants of Europe." In 1857 occurred another great financial panic and the temporary suspension of specie payments in New York; but notwithstanding these disadvantages as well as the wars and political disturbances in Europe, both planters and manufacturers enjoyed a period of unexampled prosperity during the decade ending in 1860. The civil war in America broke out in April, 1861, and marked the beginning of the "cotton famine" which continued from 1861 to 1866. In 1864, cotton rose in value, over \$1 a pound being paid. The Franco-Prussian war in 1870 and the distress in the manufacturing districts of England resulted in a great falling off in prices. In 1873, another financial panic affected the United States and Europe and the acreage of cotton was reduced. Labor strikes in the mill districts of England in 1878 greatly reduced consumption in that country. In 1880, a revival in the cotton trade took place. During the decade ending in 1890, prices were maintained with remarkable uniformity, although there were complaints of an accumulation of manufactured goods, the supply being in excess of the demand. The same was true for the years 1896 and 1897 when the stock of print cloth on hand in the United States at the close of each year was 2,300,000 and 2,390,000 pieces, respectively, an increase of nearly two million pieces as against 1895. The stock on hand at the close of 1891 was 278,000 pieces; 1892, 9,000 pieces; 1893, 340,000 pieces; 1894, 211,000 pieces; and 1895, 464,000 pieces.

The next table shows the wool clip or crop, and quantity of wool imported, for 1840, 1850, 1860, 1865, 1870, and each succeeding year until 1898; these figures have been furnished by the Department of Agriculture.



*Production and Importation of Wool. 1840-1898.*

YEARS.	NUMBER OF POUNDS OF WOOL—		YEARS.	NUMBER OF POUNDS OF WOOL—	
	Produced	Imported		Produced	Imported
1840, . . . . .	35,802,114	9,898,740	1883, . . . . .	290,000,000	70,575,478
1850, . . . . .	52,516,069	18,095,294	1884, . . . . .	300,000,000	78,350,651
1860, . . . . .	60,264,913	26,282,955	1885, . . . . .	308,000,000	70,596,170
1865, . . . . .	142,000,000	44,420,375	1886, . . . . .	302,000,000	129,084,958
1870, . . . . .	162,000,000	49,230,199	1887, . . . . .	285,000,000	114,038,080
1871, . . . . .	160,000,000	68,058,028	1888, . . . . .	289,000,000	118,558,753
1872, . . . . .	150,000,000	126,507,409	1889, . . . . .	265,000,000	126,487,729
1873, . . . . .	158,000,000	85,496,049	1890, . . . . .	276,000,000	105,431,286
1874, . . . . .	170,000,000	42,939,541	1891, . . . . .	285,000,000	129,308,648
1875, . . . . .	181,000,000	54,901,760	1892, . . . . .	294,000,000	148,870,652
1876, . . . . .	192,000,000	44,642,836	1893, . . . . .	303,153,000	172,433,838
1877, . . . . .	200,000,000	42,171,192	1894, . . . . .	298,067,384	55,152,585
1878, . . . . .	208,250,000	48,449,079	1895, . . . . .	309,748,000	206,033,906
1879, . . . . .	211,000,000	39,005,155	1896, . . . . .	272,474,708	230,911,473
1880, . . . . .	232,500,000	128,131,747	1897, . . . . .	218,548,129	350,552,026
1881, . . . . .	240,000,000	55,964,236	1898, . . . . .	218,410,868	132,795,202
1882, . . . . .	272,000,000	67,861,744			

The method adopted by the Department of Agriculture for obtaining the product of wool was to multiply the number of sheep in the United States by the average weight per fleece.

*Spindles, Looms, etc. 1896, 1898.*

The following series of tables, supplied by Dockham & Co., Boston, shows the number of spindles, looms, etc., in use in the United States for 1896 and 1898:

*Number of Cotton Spindles. 1896, 1898.*

STATES.	NUMBER OF COTTON SPINDLES		INCREASE (+), DECREASE (—), OR NO CHANGE (=) IN 1898	
	1896	1898	Number	Percentage
<b>United States.</b>	18,753,985	19,410,554	+656,619	+3.50
<i>Massachusetts,</i> . . . . .	7,790,642	7,907,388	+116,746	+1.50
<i>Alabama,</i> . . . . .	231,011	314,227	+83,216	+36.02
<i>Arkansas,</i> . . . . .	9,448	11,000	+1,552	+16.43
<i>California,</i> . . . . .	10,000	10,000	=	-
<i>Colorado,</i> . . . . .	16,688	18,312	+1,624	+9.73
<i>Connecticut,</i> . . . . .	1,045,937	1,059,244	+13,307	+1.27
<i>Delaware,</i> . . . . .	39,720	37,552	-2,168	-5.46
<i>Georgia,</i> . . . . .	731,238	799,977	+68,739	+9.40

*Number of Cotton Spindles. 1896, 1898 — Concluded.*

STATES.	NUMBER OF COTTON SPINDLES		INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1898	
	1896	1898	Number	Percentages
Illinois, . . . . .	39,000	40,500	+1,500	+3.85
Indiana, . . . . .	98,252	98,852	+600	+0.61
Kentucky, . . . . .	58,779	68,979	+10,200	+17.35
Louisiana, . . . . .	62,152	60,452	-1,700	-2.74
Maine, . . . . .	916,304	908,208	-8,096	-0.88
Maryland, . . . . .	166,800	163,600	-3,200	-1.92
Mississippi, . . . . .	72,258	73,130	+872	+1.21
Missouri, . . . . .	21,952	21,108	-844	-3.84
Nebraska, . . . . .	15,488	15,488	=	-
New Hampshire, . . . . .	1,308,802	1,323,378	+14,576	+1.11
New Jersey, . . . . .	439,824	398,494	-41,330	-9.40
New York, . . . . .	717,423	735,971	+18,548	+2.59
North Carolina, . . . . .	910,474	1,029,924	+119,450	+13.12
Ohio, . . . . .	18,000	19,200	+1,200	+6.67
Pennsylvania, . . . . .	464,017	438,435	-25,582	-5.51
Rhode Island, . . . . .	2,104,060	2,132,350	+28,290	+1.34
South Carolina, . . . . .	997,185	1,260,536	+263,351	+26.41
Tennessee, . . . . .	145,428	147,348	+1,920	+1.32
Texas, . . . . .	48,694	45,414	-3,280	-6.74
Utah, . . . . .	432	432	=	-
Vermont, . . . . .	106,583	103,383	-3,200	-3.00
Virginia, . . . . .	134,696	134,496	-200	-0.15
Wisconsin, . . . . .	32,648	33,176	+528	+1.62

The increase in the United States in number of cotton spindles was 3.50 per cent in 1898 as compared with 1896. The largest percentages of increase are found in Alabama, 36.02; South Carolina, 26.41; Kentucky, 17.35; Arkansas, 16.43; and North Carolina, 13.12.

The next table relates to wool cards.

*Number of Sets of Wool Cards. 1896, 1898.*

STATES AND TERRITORIES.	NUMBER OF SETS OF WOOL CARDS		INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1898	
	1896	1898	Number	Percentages
<b>United States.</b>	8,242	8,259	+17	+0.21
Massachusetts, . . . . .	1,837	1,898	+61	+3.32
Alabama, . . . . .	4	2	-2	-50.00
Arkansas, . . . . .	6	6	=	-
California, . . . . .	38	41	+3	+7.89

*Number of Sets of Wool Cards. 1896, 1898—Concluded.*

STATES AND TERRITORIES.	NUMBER OF SETS OF WOOL CARDS		INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1898	
	1896	1898	Number	Percent-ages
Colorado, . . . . .	2	2	=	-
Connecticut, . . . . .	674	660	-14	-2.08
Delaware, . . . . .	13	13	=	-
Georgia, . . . . .	26	27	+1	+3.85
Idaho, . . . . .	2	2	=	-
Illinois, . . . . .	79	79	=	-
Indiana, . . . . .	122	128	+6	+4.92
Iowa, . . . . .	42	42	=	-
Kansas, . . . . .	2	3	+1	+50.00
Kentucky, . . . . .	75	78	+3	+4.00
Louisiana, . . . . .	3	3	=	-
Maine, . . . . .	407	410	+3	+0.74
Maryland, . . . . .	50	50	=	-
Michigan, . . . . .	75	70	-5	-6.67
Minnesota, . . . . .	36	42	+6	+16.67
Mississippi, . . . . .	27	27	=	-
Missouri, . . . . .	46	34	-12	-26.09
Nebraska, . . . . .	1	1	=	-
New Hampshire, . . . . .	489	487	-2	-0.41
New Jersey, . . . . .	249	265	+16	+6.43
New York, . . . . .	1,469	1,488	+19	+1.29
North Carolina, . . . . .	24	19	-5	-20.83
North Dakota, . . . . .	2	2	=	-
Ohio, . . . . .	125	116	-9	-7.20
Oregon, . . . . .	29	31	+2	+6.90
Pennsylvania, . . . . .	1,324	1,287	-37	-2.79
Rhode Island, . . . . .	497	482	-15	-3.02
South Carolina, . . . . .	1	1	=	-
South Dakota, . . . . .	8	8	=	-
Tennessee, . . . . .	69	66	-3	-4.35
Texas, . . . . .	9	9	=	-
Utah, . . . . .	24	22	-2	-8.33
Vermont, . . . . .	166	167	+1	+0.60
Virginia, . . . . .	76	70	-6	-7.89
Washington, . . . . .	2	2	=	-
West Virginia, . . . . .	32	35	+3	+9.38
Wisconsin, . . . . .	80	83	+3	+3.75
Wyoming, . . . . .	-	1	+1	-

The increase in 1898 over 1896 for the United States was 0.21 per cent. The largest increases appear in Kansas, 50 per cent, and Minnesota, 16.67 per cent.

The next table shows the facts for worsted combs.

*Number of Worsted Combs. 1896, 1898.*

STATES.	NUMBER OF WORSTED COMBS		INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1898	
	1896	1898	Number	Percentages
<b>United States.</b>	1,294	1,373	+79	+6.11
<i>Massachusetts,</i> . . . . .	388	412	+24	+6.19
Connecticut, . . . . .	41	43	+2	+4.88
Kentucky, . . . . .	5	6	+1	+20.00
Maine, . . . . .	15	15	=	-
New Hampshire, . . . . .	34	37	+3	+8.82
New Jersey, . . . . .	121	119	-2	-1.65
New York, . . . . .	135	133	-2	-1.48
Ohio, . . . . .	4	4	=	-
Oregon, . . . . .	1	1	=	-
Pennsylvania, . . . . .	321	352	+31	+9.66
Rhode Island, . . . . .	216	238	+22	+10.19
Tennessee, . . . . .	2	2	=	-
Wisconsin, . . . . .	11	11	=	-

The increase in 1898 as against 1896 for the United States was 6.11 per cent. Massachusetts shows an increase equal to that shown in the aggregate for the United States, Kentucky an increase of 20 per cent, and Rhode Island an increase of 10.19 per cent.

The number of cotton looms is shown in the following table :

*Number of Cotton Looms. 1896, 1898.*

STATES.	NUMBER OF COTTON LOOMS		INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1898	
	1896	1898	Number	Percentages
<b>United States.</b>	446,798	453,281	+6,483	+1.45
<i>Massachusetts,</i> . . . . .	185,806	182,193	-3,613	-1.94
Alabama, . . . . .	4,846	6,652	+1,806	+37.27
Arkansas, . . . . .	226	310	+84	+37.17
California, . . . . .	200	200	=	-
Colorado, . . . . .	480	480	=	-
Connecticut, . . . . .	20,750	21,926	+1,176	+5.67
Delaware, . . . . .	838	838	=	-
Georgia, . . . . .	17,789	18,504	+715	+4.02
Illinois, . . . . .	908	904	-4	-0.44
Indiana, . . . . .	2,094	2,214	+120	+5.73
Kentucky, . . . . .	937	937	=	-
Louisiana, . . . . .	1,577	1,545	-32	-2.03

*Number of Cotton Looms. 1896, 1898 — Concluded.*

STATES.	NUMBER OF COTTON LOOMS		INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1898	
	1896	1898	Number	Percentages
Maine, . . . . .	24,189	24,139	-50	-0.21
Maryland, . . . . .	2,611	2,660	+58	+2.22
Mississippi, . . . . .	1,992	2,010	+18	+0.90
Missouri, . . . . .	494	510	+16	+3.24
Nebraska, . . . . .	416	416	=	-
New Hampshire, . . . . .	35,098	35,230	+132	+0.38
New Jersey, . . . . .	2,621	2,300	-321	-12.25
New York, . . . . .	15,420	15,474	+54	+0.35
North Carolina, . . . . .	20,720	23,704	+2,984	+14.40
Ohio, . . . . .	283	283	=	-
Pennsylvania, . . . . .	21,802	18,990	-2,812	-12.90
Rhode Island, . . . . .	41,406	40,085	-1,321	-3.19
South Carolina, . . . . .	31,092	38,293	+7,201	+23.16
Tennessee, . . . . .	3,221	3,438	+217	+6.74
Texas, . . . . .	1,335	1,105	-230	-17.23
Utah, . . . . .	9	9	=	-
Vermont, . . . . .	2,082	2,082	=	-
Virginia, . . . . .	4,489	4,742	+253	+5.64
West Virginia, . . . . .	26	22	-4	-15.38
Wisconsin, . . . . .	1,041	1,077	+36	+3.46

The figures for the United States show an increase of 1.45 per cent in 1898 over 1896. Of the States, Alabama leads, with an increase of 37.27 per cent, and is closely followed by Arkansas, showing an increase of 37.17 per cent. South Carolina exhibits an increase of 23.16 per cent; and North Carolina an increase of 14.40 per cent.

The next table relates to woollen looms.

*Number of Woollen Looms. 1896, 1898.*

STATES AND TERRITORIES.	NUMBER OF WOOLLEN LOOMS		INCREASE (+), DECREASE (-), OR NO CHANGE (=) IN 1898	
	1896	1898	Number	Percentages
<b>United States.</b>	75,080	79,059	+3,979	+5.30
Massachusetts, . . . . .	19,997	20,518	+521	+2.61
Alabama, . . . . .	10	10	=	-
Arkansas, . . . . .	37	37	=	-
California, . . . . .	183	201	+18	+9.84
Colorado, . . . . .	8	7	-1	-12.50

*Number of Woollen Looms. 1896, 1898 — Concluded.*

STATES AND TERRITORIES.	NUMBER OF WOOLLEN LOOMS		INCREASE (+), DECREASE (—), OR NO CHANGE (=) IN 1898	
	1896	1898	Number	Percent-ages
Connecticut, . . . . .	3,800	3,797	—3	—0.08
Delaware, . . . . .	220	220	=	-
Georgia, . . . . .	576	576	=	-
Idaho, . . . . .	8	6	—2	—25.00
Illinois, . . . . .	524	494	—30	—5.73
Indiana, . . . . .	1,070	994	—76	—7.10
Iowa, . . . . .	182	200	+18	+9.90
Kansas, . . . . .	5	17	+12	+240.00
Kentucky, . . . . .	1,538	1,599	+61	+3.97
Maine, . . . . .	2,598	2,704	+106	+4.08
Maryland, . . . . .	321	347	+26	+8.10
Michigan, . . . . .	194	184	—10	—5.15
Minnesota, . . . . .	155	165	+10	+6.45
Mississippi, . . . . .	382	382	=	-
Missouri, . . . . .	277	244	—33	—11.91
Nebraska, . . . . .	6	6	=	-
New Hampshire, . . . . .	4,491	4,499	+8	+0.18
New Jersey, . . . . .	3,125	3,441	+316	+10.11
New York, . . . . .	5,600	6,249	+649	+11.59
North Carolina, . . . . .	187	166	—29	—21.17
North Dakota, . . . . .	12	12	=	-
Ohio, . . . . .	776	769	—7	—0.90
Oregon, . . . . .	149	152	+3	+2.01
Pennsylvania, . . . . .	17,641	19,113	+1,472	+8.34
Rhode Island, . . . . .	7,785	8,629	+844	+10.84
South Carolina, . . . . .	-	40	+40	-
South Dakota, . . . . .	58	62	+4	+6.90
Tennessee, . . . . .	1,321	1,271	—50	—3.79
Texas, . . . . .	135	151	+16	+11.85
Utah, . . . . .	117	116	—1	—0.85
Vermont, . . . . .	865	859	—6	—0.69
Virginia, . . . . .	223	218	—5	—2.24
Washington, . . . . .	28	37	+9	+32.14
West Virginia, . . . . .	199	238	+39	+19.60
Wisconsin, . . . . .	327	326	—1	—0.31
Wyoming, . . . . .	-	3	+3	-

The increase in 1898 as against 1896 in the number of woollen looms in the United States is 5.30 per cent. Kansas shows an increase of from five to 17 looms, or 240 per cent; Washington, an increase of 32.14 per cent; North Carolina, 21.17 per cent; West Virginia, 19.60 per cent; Texas, 11.85 per cent; New York, 11.59 per cent; Rhode Island, 10.84 per cent, and New Jersey, 10.11 per cent.

The facts for silk looms are shown in the following table :

*Number of Silk Looms. 1896, 1898.*

STATES.	NUMBER OF SILK LOOMS		INCREASE (+) OR DECREASE (—) IN 1898	
	1896	1898	Number	Percent-ages
<b>United States.</b>	28,943	38,199	+9,256	+31.98
<i>Massachusetts,</i> . . . . .	650	843	+193	+29.69
<i>California,</i> . . . . .	—	8	+8	—
<i>Connecticut,</i> . . . . .	495	816	+321	+64.85
<i>Illinois,</i> . . . . .	34	191	+157	+461.76
<i>Maine,</i> . . . . .	100	125	+25	+25.00
<i>Maryland,</i> . . . . .	59	51	—8	—13.56
<i>New Jersey,</i> . . . . .	18,611	20,964	+2,353	+12.64
<i>New York,</i> . . . . .	3,256	4,313	+1,057	+32.46
<i>Pennsylvania,</i> . . . . .	5,694	10,836	+5,142	+90.31
<i>Rhode Island,</i> . . . . .	44	48	+4	+9.09
<i>Utah,</i> . . . . .	—	4	+4	—

The increase in silk looms for the United States was 31.98 per cent; for Illinois, 461.76 per cent; Pennsylvania, 90.31 per cent; Connecticut, 64.85 per cent; New York, 32.46 per cent; Massachusetts, 29.69 per cent; Maine, 25 per cent; New Jersey, 12.64 per cent; and Rhode Island, 9.09 per cent.

The following table, drawn from estimates prepared by Mr. Thomas Ellison of Liverpool, Eng., shows the number of spindles in operation during the commercial season ending in 1898 in all the countries of the world :

*Number of Spindles in Operation. 1897-98.*

COUNTRIES.	Number of Spindles	Percentage of Total Spindles
United States, . . . . .	17,356,537	17.30
North, . . . . .	13,900,000	13.85
South, . . . . .	3,456,537	3.45
Great Britain, . . . . .	44,900,000	44.75
Germany, . . . . .	7,884,000	7.86
Russia, . . . . .	6,000,000	5.98
France, . . . . .	5,300,000	5.28
East India, . . . . .	4,065,618	4.05
Austria, . . . . .	3,140,000	3.13
Spain, . . . . .	2,615,000	2.61
Italy, . . . . .	1,886,000	1.88
Switzerland, . . . . .	1,710,000	1.70
Japan, . . . . .	1,150,000	1.15
Poland, . . . . .	965,000	0.96
Belgium, . . . . .	900,000	0.90

*Number of Spindles in Operation. 1897-98 — Concluded.*

COUNTRIES.	Number of Spindles	Percent- age of Total Spindles
China, . . . . .	565,000	0.56
Canada, . . . . .	491,252	0.49
Mexico, . . . . .	448,156	0.45
Sweden, . . . . .	380,000	0.36
Holland, . . . . .	290,000	0.29
Portugal, . . . . .	230,000	0.23
Greece, . . . . .	70,000	0.07
<b>TOTAL WORLD'S SPINDLES,</b> . . . . .	<b>100,326,563</b>	<b>100.00</b>

Considerable numbers of spindles have been put in operation in Brazil during the past few years, according to the reports of the United States Consuls, but no reliable data exist upon which to base an estimate. There are also some spindles at work in Turkey and at Alexandria, Egypt, but they are as yet unimportant as compared with the other countries.





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# INDUSTRIAL CHRONOLOGY.

1898.

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# INDUSTRIAL CHRONOLOGY—1898.

**Abington.** In January, work began in new addition to shoe factory of M. H. Arnold & Co.—Arnold Bros., lasts, succeeded by Arnold Bros. & Co.; in August, new machinery added. *March.* Cobb & Thompson, shoes, shut down indefinitely. *May.* Percy Shaw began manufacture of heels. *July.* Geo. Garrity began erection of shoe factory. *September.* Lasters in shoe factories struck against prices proposed for machine lasting; work resumed by hand; in October, new price list adopted and machine work resumed.

**Acton.** In January, No. 5 mill of American Powder Co. destroyed by fire; rebuilt and in July again destroyed together with mill No. 4. *September.* Powder house of Titanic Smokeless Powder Co. destroyed by explosion. *December.* Shoddy mill owned by John A. Bowen, idle since 1896, leased by F. & W. Rawitser.—A. E. Lawrence succeeded Whitcomb & Lawrence.

**Adams.** In January, Greylock Shirt Co. shut down temporarily owing to accident to engine; in August, shut down for vacation; in November, ran on 40-hours time. *February.* Renfrew Manufacturing Co. ran gingham department nights. *March.* Windsor Falls Manufacturing Co. added new looms; in August, shut down for repairs; in November, shut down indefinitely. *April.* Adams Marble Co. started season's work in quarry. *June.* L. L. Brown Paper Co. began erection of addition for storage and office purposes, 22 x 34 feet, four stories; in September, shut down for stock taking.—Reduction in wages made by Adams Bros. Manufacturing Co. and Berkshire Manufacturing Co.; in mills of latter company, weavers, doffers, and back boys struck. *November.* James Hunter Machine Co. of North Adams leased old Zylonite property. *December.* Card room of No. 1 mill, Berkshire Manufacturing Co., damaged by fire.

**Agawam.** In August, Agawam Co. made improvements and ran carding and spinning departments overtime.

**Amesbury.** In January, Hamilton Woollen Co. reduced wages. *February.* S. R. Bailey & Co., carriages, increased space; in March, added new engine and ran on 20-hours time.—Sizers employed by Merrimac Hat Co. struck for increase in wages. *April.* Amesbury Electric Light Co. added new generator. *May.* Atwood Automatic Tire Inflation Co. organized to manufacture slot machinery for inflating bicycle tires; capital stock, \$50,000. *August.* Lockwood & Brown, carriages, set up electric generator.—Hassett & Hodge, carriages, removed into new quarters. *December.* A. L. Lewis & Co. leased factory to manufacture women's and children's clothing; to remove here from Newburyport, Jan. 1, 1899.

*Shipments.* In the following table is shown, by months, the number of carriages shipped by rail during 1897 and 1898, the figures being taken from the *Amesbury News*:

MONTHS.	1897	1898	MONTHS.	1897	1898
January, . . . .	143	235	August, . . . .	360	447
February, . . . .	263	331	September, . . . .	333	379
March, . . . .	1,214	1,325	October, . . . .	329	367
April, . . . .	1,767	1,362	November, . . . .	233	275
May, . . . .	1,516	1,157	December, . . . .	224	212
June, . . . .	1,177	956			
July, . . . .	581	586	TOTALS, . . . .	8,190	7,632

The effect of the business depression is distinctly shown in the shipments recorded for the months of April, May, and June of 1896 as compared with the same months of the previous year. In the next table, we show the carriage shipments by rail for the past four years, in conjunction with the value of goods made in 21 identical establishments making return in each of the years specified. It should be understood, however, that the number of carriages shipped by rail has no direct relation to the value of goods made in these 21 establishments, the figures being presented for the purpose of showing that the condition of the industry as indicated by the returns of product made to this Department and published in the Annual Statistics of Manufactures are borne out by figures drawn from other sources, and *vice-versa*.

YEARS.	Number of Carriages Shipped (by rail)	Value of Goods Made (21 establishments)	PERCENTAGES OF INCREASE (+) OR DECREASE (—) IN —	
			Shipments	Value
1895, . . . . .	11,305	\$956,086	—	—
1896, . . . . .	10,390	919,865	—8.82	—3.79
1897, . . . . .	8,190	786,738	—21.17	—14.47
1898, . . . . .	7,632	828,076	—6.81	+5.25

From the above table it may be noted that, in 1896 as compared with 1895, there was a decrease of 8.82 per cent in the number of carriages shipped by rail and a decrease of 3.79 per cent in the value of goods made in 21 representative establishments, each making returns in both years. The percentage of decrease in 1897 as compared with 1896 rose to 21.17 in shipments and 14.47 in value of goods made. Comparing 1898 with 1897, we find a still further decrease of 6.81 per cent in shipments, with a gain in the value of goods made of 5.25 per cent. It would appear, therefore, that notwithstanding the depression of 1898, prices ranged somewhat higher or that the sales covered goods of a higher average product value, an upward tendency in value of total output being shown. If we compare 1898 with 1895, we find that while the number of carriages shipped by rail shows a decrease of 33.02 per cent, the decrease in value of goods made was but 13.39 per cent. The representative character of the 21 establishments selected for comparison is shown by the fact that, according to the Census of 1895, there were in Amesbury 43 establishments classed under the industry head of "Carriages and Wagons," which included the manufacture of completed carriages, parts of carriages, and repairing, the total value of product reported therefrom being \$1,561,288. The 21 establishments represented in the preceding table produced, in 1895, carriages and wagons (repairing not included) to the value of \$956,086, or 61.24 per cent of the total value of goods made and work done in all the establishments in this industry.

**Andover.** In January, Smith & Dove Manufacturing Co., linen thread, ran with reduced force; in June, ran overtime. — Marland Mills, woollens, shut down one-third of plant on account of dull trade; in December, ran on full time. *April.* Tyler Rubber Co. reduced force and running time. *May.* Ballardvale Mills, woollens, began work on addition to plant; in August, shut down for three weeks; in December, ran on full time. — Old Craighead & Kintz factory, used as a storehouse for wool, destroyed by fire. *June.* F. H. Hardy succeeded C. A. Hardy & Son. *October.* Brush factory of Henry Edwards destroyed by fire.

**Arlington.** In October, Robbins Spring Water Co. incorporated to acquire land and sell spring water; authorized capital, \$100,000.

**Ashburnham.** In January, Allen-Thompson-Whitney Co. organized to manufacture chairs, bureaus, etc., and absorbed factories of Orange Whitney & Co. and I. E. Platts of this place; D. L. Thompson & Son, Templeton; and C. W. Allen, Boston; in November, began erection of addition to plant. *March.* Chair factory of W. F. Whitney destroyed by fire. *December.* Brooks Basket Co. removed to Methuen, to start up Jan. 1, 1899.

**Ashfield.** In January, Geo. W. Cook succeeded to the grist mill business of A. D. Flower.

**Ashland.** In May, Warren Thread Co. began finishing yarn by new process. *June.* John L. Pingree and C. S. Brewer began manufacture of shoes under name of Ashland Boot & Shoe Co. *December.* Revere Confectionery and Pop Corn Works of Framingham succeeded Revere Confectionery Co. of this place.

**Athol.** In January, sawmill of J. L. Hunt damaged by explosion. — **White & Raymond**, who in December, 1897, purchased plant of Edwin Ellis & Son, succeeded to business of Millard White. *February.* Bates Bros., wallets, organized as Bates Bros. Co.; capital stock, \$75,000. *March.* Wallet factory of Chas. Eninger damaged by fire. *May.* Chas. M. Lee's Sons, shoes, reduced force. *August.* Bennett & Van Valkenberg ran on five-days time. *September.* Diamond Match Co. recently purchased match-wood factory of Edson Fitch and completed new factory, 5½ x 210 feet, one story, and sold old buildings. — Eagle Woolen Mill shut down on account of dull trade; in October, resumed operations and made repairs. *December.* Hat factory of B. H. Adams damaged by fire.

**Attleborough.** In January, Hebron Manufacturing Co., cotton goods, reduced wages in all departments; in May, began changes in machinery for purpose of changing from cloth to yarn; in October, set up new drawing frames; and in December, completed reorganization of plant, the best of the looms being set up in the Dodgeville mill, and changes being made from mule to frame spinning. *March.* Jas. E. Blake & Co., jewelry, began erection of factory, 50 x 213 feet, two stories. *May.* Factories of following jewelry manufacturing firms destroyed by fire: C. H. Allen & Co., John Anthony, Attleborough Manufacturing Co., Bates & Bacon, Bay State Optical Co., S. O. Bigney & Co., (removed to Providence, R. I.), W. & S. Blackington, (removed to Providence, R. I.), Blake & Claflin, Bliss Bros., E. T. Bright, J. C. Cummings & Co., Daggett & Clapp, W. E. Dunham, W. E. Hayward, Hutchinson & Trafton, J. T. Inman & Co., Regnell, Bigney, & Co., Chas. L. Robbins, and Henry Wexel & Co., (retired from business permanently). *June.* Red Seal Manufacturing Co., toilet articles, removed from Lowell to this place. *July.* Benj. B. Knight, of Hebron Manufacturing Co., died in Providence, R. I., aged 85 years. *August.* Fuller & Bassett established leather renovating. *September.* Manufacturers of collar buttons formed a price combination. *December.* Robt. Knight of B. B. & R. Knight, owners of Hebron Manufacturing Co., secured control of 15 mills in Rhode Island and will run same in conjunction with the four now owned in Massachusetts. — Geo. L. Brown & Co. succeeded Ellis, Livsey, & Brown.

**Auburn.** In August, Stoneville Worsted Co. shut down indefinitely. *September.* John F. Horne established manufacture of heels.

**Avon.** In January, J. L. Lewis Co., shoes, removed to Brockton. — L. G. Littlefield, shoes, removed portion of plant to New Hampshire; in March, ran remaining portion on full time; in April, shut down; in December, resumed operations after brief shutdown. *July.* Cable Cycle Co. leased building and made repairs preparatory to manufacturing. *September.* Lasters in shoe factories struck through sympathy with those of Brockton and vicinity; later, satisfactory arrangements were made and work resumed.

**Ayer.** In February, Ayer Tanning Co. incorporated; capital stock, \$50,000. *September.* Wm. T. Piper & Co., vinegar, began erection of new factory, 40 x 90 feet, two stories, and changed name to W. T. Piper Co.

**Barre.** In September, John W. Abbott, formerly shoe manufacturer at West Brookfield, engaged as superintendent at Barre Shoe Co.; business increased and 150 hands employed. *October.* J. E. Smith's cotton mill shut down and many of the operatives left town.

**Becket.** In February, Becket Silk Co. added machinery; in April, made repairs about dyehouse.

**Belchertown.** In September, R. H. Long Shoe Co. ran on full time. *October.* New shoe manufacturing concern formed under name of Belchertown Shoe Manufactory; capital, \$5,000.

**Bellingham.** In May, Ray's Woollen Co. shut down temporarily. *June.* Box factory of S. A. Greenwood destroyed by fire; rebuilt. *July.* Metcalf & Nugent Bros., boxes, succeeded Francis Metcalf. *August.* Taft, Murdock, & Co., woollens, made improvements in fire-protection system; in December, shut down for 10 days to reset boiler and make incidental repairs. *October.* Ray's Woollen Co. resumed operations

after a shutdown of several weeks; in December, started up on line of fancy, plain, and colored goods.

**Belmont.** In July, Price's carriage factory destroyed by fire.

**BEVERLY.** In January, Horace L. Walker retired from shoe firm of Marsters & Walker; business continued under same name; later, succeeded by Bradstreet, Marsters, & Appleton. — Warren & Co., shoes, succeeded by J. W. Woodbury & Co. *February.* Consolidated Hand Method Lasting Machine Co. ran factory nights owing to rush of orders; in March, increased force. — Curtis & Lefavour, shoes, dissolved; business continued independently by each partner as A. W. Curtis & Co. and C. L. Lefavour. *June.* Millett, Woodbury, & Co. produced new style shoe designed for women working in powder mills. *July.* Franklin Shoe Co. established. *October.* Shoe factories of Brown & Denning and Rufus E. Larcom destroyed by fire. *November.* Wm. E. Norwood, shoe manufacturer, died. — Sawyer & Gordon, shoes, dissolved; Chas. H. Sawyer, successor.

**Billerica.** In January, Talbot Mills, woollens, advanced wages; in August, ran full on government orders; in October, began erection of addition to wing of main mill, 40 x 150 feet, three stories, and an addition to dyehouse, 130 x 80 feet, together with new boiler house. *August.* Faulkner Manufacturing Co. ran full time on government orders; in October, shut down for repairs and addition of new machinery.

**Blackstone.** In January, Blackstone Manufacturing Co., cottons, reduced wages; in June, shut down for one week. *February.* Chas. Fletcher, who purchased Waterford Mills, November, 1897, removed machinery from No. 1 mill and made repairs on No. 2 mill; in March, started up No. 2 mill and made repairs on No. 1 mill; in May, added new machinery and changed name to Saranac Worsted Mill; in June, set up new machinery; in August, began erection of addition to No. 1 mill, 90 x 100 feet, three stories. — United States Rubber Co. made repairs on devulcanizing works at Millville factory. *August.* New system of town water supply for fire protection installed and connections made with the several mills. *October.* Lawrence Felting Co. ran nights. — J. H. Donahue succeeded A. E. Armstrong of East Blackstone Woollen Co.

**BOSTON.** In January, Alexander Hill Bedding Co. incorporated; capital stock, \$6,000. — Sparrell Print reduced working time, wages remaining the same. — Stiles & Winslow Leather Co. retired from business; no successor. — Plant of Eastburn Press, printers, damaged by fire. — Female stitchers employed by Co-operative Rubber Co. struck for higher wages. — Heffernan & Devine completed erection of new brewery; brick, 78 x 220 feet, four stories. — Enlargement of Waldeberg Brewery begun. — E. P. Barrett Manufacturing Co. surrendered its charter and retired from business; no successor. — M. M. Pigott & Co., colors, retired from business. — L. F. Gillette, photographs, discontinued; no successor. — Sidney Cushing & Co. retired from business; no successor. — C. W. Allen, chairs, succeeded by Allen-Thompson-Whitney Co., with factories at Ashburnham and Templeton.

*February.* Factories of Pierce & Gardner, lamp fixtures, and A. L. Perkins, shoe tools, damaged by fire. — Factory of G. W. Bent & Co., beds and bedding, destroyed by fire; later, established manufacturing in Everett and later removed to Boston. — Men employed on city bath house struck. — H. Leonard, surcingle, died; business discontinued; no successor. — Chas. Amory, retired textile manufacturer, died, aged 88 years.

*March.* J. P. & W. H. Emond, carriages, incorporated. — Hub Brewing Co. began erection of brewery; brick, 92 x 100 feet, five stories. — Barstow Stove Co. sold tinware portion of business to White & Miller. — Chas. T. Shourds & Co., feather dusters, sold to Boston Feather Duster Co. — S. E. Chubbuck & Sons, machinists, retired from business; no successor. — Seth Bryant, retired shoe manufacturer, died, aged 97 years; Mr. Bryant began manufacture of shoes in 1822.

*April.* Clifton Co. incorporated to manufacture soaps and oils. — Factory of E. E. Rice & Co., dye stuffs, damaged by fire. — Machine shops at Navy Yard ran overtime on account of the need of repairs, etc., in connection with the Spanish-American war. — Geo. C. Davis Co., shoes, leased vacant Dennison factory building in Roxbury District, and removed portion of machinery from Lynn; in June, completed removal of Lynn plant to this city; lasters struck against reduction of wages; the State Board of Arbitration recommended strikers to return to work at old rates, pending the adjustment of the several departments in the factory which were not fully organized on a permanent basis of prices; decision of Board accepted and lasters returned to work; in December, factory damaged by fire. — Norris & Hyde, pianos, succeeded by Norris & Hyde —

Incorporated.—Roxbury Carpet Co. shut down for an indefinite period; in June, resumed operations with reduced force; in August, shut down for two weeks.—About 30 lasters employed by Thos. G. Plant Co. struck because of reduction in price on certain grades of work.—Boston Electric Light Co. began erection of new plant at South Boston.—Richard Power & Son, monumental work, succeeded by Troy Bros.

*May.* F. H. Gilson Co. incorporated to carry on business of F. H. Gilson & Co., printers and bookbinders; capital stock, \$35,000.—Boston Belting Co. added manufacture of golf balls to product.—Land purchased by Oliver Ditson Co. and White-Smith Music Publishing Co. for erection of new plants to take place of those removed from site of new Back Bay railroad station.—Beacon Shoe Manufacturing Co. retired from business; no successor.—Estes & Lauriat, publishers, dissolved; manufacturing continued by Dana Estes & Co. and retail business by Chas. E. Lauriat Co.—Factory of L. C. Chase & Co., horse clothing, damaged by fire.—Heaton-Peninsular Button Fastener Co. removed from Providence, R. I., to South Boston.—Symonds & Poor retired from business; no successor.

*June.* United States Electric Leather Process Co. incorporated under laws of Maine to manufacture leather by new process invented by Geo. D. Burton; authorized capital, \$1,500,000.—Stone masons at Brighton struck for an increase of three cents per hour.—John R. Alley, president Alley Brewing Co., died, aged 76 years.—Chas. E. Bugbee, builders' finish, died; business closed up.—Murphy & Hill, vinegar, discontinued business; no successor; portion of plant sold to Howe Bros., Marlborough; a part to the McLaughlin Co., Harvard; and the balance to H. J. Wilkins, Holliston.—The Vega Co., musical instruments, acquired control of Standard Band Instrument Co.—Boston Die Co. went out of business; later, succeeded by Geo. F. Kenney.—J. K. Souther & Sons, brewers, transferred their property to Souther Brewing Co.—Union Heel Trimmer Co. discontinued manufacturing; goods to be made in future by McKay Metallic Fastening Co.

*July.* Halford Sauce Co. incorporated; capital stock, \$15,000.—Chas. F. Stanley established manufacture of shoes.—Bay State Manufacturing Co., shoe machinery, incorporated under Maine laws; authorized capital, \$500,000.—Factories of Joseph Lefkowitz, cigars, and Meyer I. Jacobs, caps, damaged by fire.—Housesmiths employed on Masonic Building struck.—Jos. W. Hartshorn & Co. retired from business; no successor.—The T. B. Bailey Co., perfumers, sold to Bailey Manufacturing Co., a corporation organized under Maine laws.—John G. McLaren, building materials, went out of business; no successor.

*August.* Samuel Orr, hat manufacturer, died, aged 55 years.—Glove factory of Milton A. Kent destroyed by fire.—Moore, Sweeney, & Co., musical materials, retired from business; no successor.—G. A. Dew sold out; no successor.—E. A. Danielson, carriages, went out of business; no successor.—L. Frang & Co. shut down plant permanently; later, removed to Springfield.

*September.* Collins & Fairbanks, hats, incorporated as Collins & Fairbanks Co.; capital stock, \$30,000.—C. A. Siegemund Co. incorporated to manufacture drugs; capital stock, \$4,000.—Hub Tanning Co. incorporated under Maine laws; authorized capital, \$100,000.—Work begun on refuse-utilization plant for City of Boston.—Third and last section of Subway completed and opened to travel.—Oliver L. Briggs & Son, billiard tables, removed to new quarters.—Theatrical mechanics struck; unsuccessful; new hands employed and strikers not taken back.

*October.* Boston Co-operative Press incorporated; capital stock, \$10,000.—Factory of Charlestown Bundle Wood Co. damaged by fire.—New England Dyeing & Finishing Co. purchased plant in Dorchester.—E. Van Noorden & Co., skylights, incorporated as E. Van Noorden Co.—J. C. Chapman, inventor and formerly superintendent of Walworth Manufacturing Co., died, aged 76 years.—Plant of Trimount Manufacturing Co. damaged by fire.—C. S. Fifield & Co., shoe machinery, made addition to plant.—Chauncy Thomas, carriage manufacturer, died, aged 76 years.—J. Lincoln Collins, brass work, went out of business.—Daniel Morris, pianos, died; business closed up.—Mary E. Flynn, sausages, succeeded Daniel H. Flynn.—Wm. Neagle Co., furniture, closed up business; no successor.—Buff & Berger dissolved; succeeded by C. L. Berger & Sons.—Wm. Gilchrist, carriages, succeeded by Mark Bennett.

*November.* India Extract Co. went out of business; no successor.

*December.* Plant of Jewett Lumber Co., East Boston, sold at auction.—Thomas Shoe Manufacturing Co. dissolved; C. E. Greenman, former treasurer, succeeded.—Vestmakers demanded that workmen promise not to join a labor union; 150 workmen struck; shops declared "free."—Samuel B. Wood, retired shipwright, died, aged 69 years.—Chas. E. Thayer, vice president Boston Dyewood & Chemical Co., died, aged 70 years.—Dyer, Rice, & Co., fur garments, went out of business.—A. L. Richardson



& Bro., clothing, succeeded by A. L. Richardson of Woburn. — Among other business changes made during the year in this city were the following: I. Bash & Son succeeded Bash & Co.; H. L. Bowker Co. succeeded to the business of the estate of H. L. Bowker & Co.; Brown & Simonds Co. succeeded Chas. J. Brown & Co.; Jas. M. Bean Can Co. succeeded James M. Bean & Co.; Bay State Brass Foundry succeeded Geo. H. Lane doing business as the Blake Bell Co.; Adams & Singleton succeeded Brooks & Pike; Columbia Manufacturing Co. succeeded Bardwell, Anderson, & Co.; F. W. Rauskolb, agent, succeeded to estate of Geo. W. Davis; Mellin Food Co. of North America succeeded Dollber-Goodale Co.; Grocer's Specialty Co. & Eagle Extract Co. succeeded Eagle Extract Co.; A. Grosberg, doing business as Eagle Cloak Co. changed style to Eagle Wrapper Co.; John Fisher & Co. succeeded to John Fisher and began manufacture of boxes; estate of Oscar Gowing incorporated as Oscar Gowing Shirt Co.; A. M. Nickerson doing business in Somerville as Hub Wire Screen & Shade Co. succeeded by Nickerson & Bond and business removed to Boston; Hooper & McDonald succeeded E. A. Hooper & Co.; R. G. Loud & Co. succeeded Loud Bros.; Levy, Nathanson, & Co. succeeded Levy, Greenbaum, & Co.; George Morris succeeded Sarah L. Morris; Noyes Bros. incorporated as Noyes Bros. — Incorporated; W. W. Potter doing business as W. W. Potter Shank Co. succeeded Potter & Watson; Smith, Chase, & Cutting succeeded Richardson, Smith, & Chase; William Smith, Elmwood Spring Brewery, succeeded by Wm. Smith & Sons Brewing Co., and Revere and Elmwood breweries combined under one management; Wm. F. Schrafft & Sons succeeded Wm. F. Schrafft; N. Webster & Co. succeeded A. P. Sewall; Rogers Co. succeeded F. E. Stroh; Nathaniel Tufts Meter Co. succeeded to the business of estate of Nathaniel Tufts; Alonzo Tuttle succeeded A. & J. E. Tuttle; Anthony Kelley, doing business as Union Paste Co., succeeded to James S. Chase & Co.; C. F. Ward Mirror Co. succeeded Chas. F. Ward; F. B. Tilton & Co. succeeded Wheelock & Co.; Thompson & Leavitt succeeded Otis E. Weld & Co.

**Boxford.** In February, Wm. W. Howe of Edward Howe & Son, shoes, died; factory closed and business discontinued.

**Braintree.** In February, W. F. Nott of Electric Stain Co., Boston, died. *July.* Victor Metals & Foundry Co. began erection of plant. *September.* Machine lasters at factories of Williams & Kneeland and D. B. Closson & Co. struck; Williams & Kneeland resumed work by hand; D. B. Closson & Co. shut down; in October, D. B. Closson & Co. resumed by machine; places of strikers filled. — Edward B. Hayden, formerly manufacturer of cotton duck at Plymouth, died. *October.* Abraham Morrison, of A. S. Morrison & Bros. died; factory closed and business discontinued.

**Bridgewater.** In February, shoe factory of W. H. McElwain & Co. destroyed by fire; rebuilt, and occupied in June. *May.* Monarch Horse Nail Co. incorporated; capital stock, \$11,800. *July.* Jenkins Bros., leather-board, set up two new boilers. — Brick sheds and surroundings of E. L. Cook destroyed by fire. *August.* Cornell & May, slippers, dissolved. *September.* Factory of Bridgewater Box Co. destroyed by fire; business discontinued. — Edgesetters and lasters employed by W. H. McElwain & Co. struck; settled in October. *October.* Fifteen Armenian pullers-on, employed by W. H. McElwain & Co., originally employed to replace strikers, struck in turn because, as alleged, the firm changed method of payment from day price to piece price. *December.* Martin Wood, boxes, leased factory to Lee & King.

**BROCKTON.** In January, J. B. Lewis Co., shoes, removed from Avon to this city. — Peoples Co-operative Shoe Manufacturing Co. formed; capital stock, \$5,000; in February, stock increased to \$15,000; in March, began operations. — Brockton Box Toe Co. and Eureka Box Toe Co. consolidated as Brockton & Eureka Box Toe Co.; later, absorbed business of J. E. Elkins. — Empire Shoe Co. added story to factory; in March, finishers struck because of dissatisfaction with prices; in April, lasters struck through sympathy with finishers; later, settlement effected. — T. D. Barry & Co., shoes, added new machinery. — Ware, Lincoln, & Thayer, shoes, increased force; in June, dissolved, succeeded by Ware & Lincoln. — W. L. Douglas Shoe Co. shut down for inventory; in July, company obtained permission to carry on business in Illinois; in September, cutters struck because of grievance, places filled; in October, began erection of 40 x 75 foot addition; completed and occupied in December; company made an agreement with Boot & Shoe Workers Union by which none but members of that organization should be employed, that the union stamp should be used upon all goods produced, that no strikes should take place on part of employees, and that all matters in dispute which could not be settled mutually should be referred to the State Board of Arbitration, whose decision

should be final and binding upon both parties. — Henry L. Adams of Stacy, Adams, & Co., shoes, died.

*February.* Briggs Rand Co. established manufacture of rands. — Field Bros., shoes, increased capacity of plant. — Chas. A. Eaton Co., shoes, shut down on account of high water.

*March.* M. A. Packard & Co., shoes, incorporated as M. A. Packard Co.; capital stock, \$600,000. — Starrett, Higgins, & Oakman established to manufacture shoes; in May, started up. — Samuel E. Wilbur retired from firm of E. E. Taylor & Co.; business continued under old name; in December, firm removed to larger quarters.

*April.* J. S. Allen Shoe Co. established manufacture. — Bouvé-Crawford Co., shoes, dissolved; business continued by Harvey F. Crawford; later, established as Crawford Shoe Makers. — Work begun on new shoe factory for Geo. G. Snow; brick, 70 x 140 feet, four stories; completed in August. — S. E. Packard & Son, paper boxes, began erection of addition to factory, 57 x 80 feet, two stories. — Baxendale & Co. retired from business; John Simmons continued under style of Baxendale Toe Co.

*May.* Addition begun at shoe factory of E. & L. C. Keith; wood, 40 x 100 feet, three stories. — Field-Hazzard Co. resumed operations after temporary shut down for repairs. — Churchill & Alden, shoes, increased force and made improvements in order to fill government contract. — Geo. F. Walker retired from Brockton Stay Co.; no change in style. — Frank S. Tisdale retired from firm of Kimball, Tisdale, & Baker, shoes; style changed to Kimball & Baker. — Chas. T. Reynolds, retired shoe manufacturer, died, aged 80 years.

*June.* T. A. Norris Machine Co. incorporated; capital stock, \$20,000. — Faulkner, Crafts, & Co., shoes, dissolved, succeeded by Crafts, Harrington, & Co. — John A. Laird established manufacture of stays. — Lasters at factory of Myron F. Thomas struck because of dissatisfaction with price list; settled.

*July.* Preston B. Keith Shoe Co. completed addition to factory. — Snell & Atherton, shoe tools, shipped goods to England, Australia, and South America. — Brockton Cut Sole Co. dissolved; department of shoe counters sold to Robert L. Williams, formerly of firm. — W. L. Dunbar, shoe patterns, ran overtime; in December, ran 14 hours daily to fill orders. — General closing of shoe factories for several days for Fourth of July vacation. — Planing mill of C. E. Jennings and shoe factory of Howard & Foster damaged by fire.

*August.* C. C. Rogers, machinist, retired from business; no successor. — Brockton Welting Co. received government orders; in December moved to larger quarters and established new currying plant. — Tuck Manufacturing Co. received orders from Germany. — R. B. Grover & Co., shoes, shut down for stock taking.

*September.* J. W. Terhune Shoe Co. incorporated; capital stock, \$20,000. — L. A. Burke established manufacture of shoes. — New firm, Bicycle Shoe Co., leased quarters and established manufacture of bicycle shoes; purchased plant of Elmer Loring, Marlborough, and moved it to Brockton. — Kimball Bros. & Sprague began manufacture of the Wood Tackless Lasting Machine, the invention of Mrs. Julia R. Wood. — A. M. Niles Shoe Co. moved to Springfield, Vt.

*October.* Henry B. Packard, retired shoe manufacturer, died, aged 75 years.

*November.* Hub Gore Makers awarded gold medal by Trans-Mississippi International Exposition, held at Omaha, Neb. — Geo. F. Bouvé, formerly of Bouvé-Crawford Shoe Co., died in Brookline, aged, 61 years.

*December.* Goodrich Shoe Polish Co. dedicated new plant. — Enterprise Shoe Co. incorporated under Maine laws; authorized capital, \$10,000; capital paid in, \$400. — During the year Whitman & Keith incorporated as Whitman & Keith Co., and John A. Barbour purchased the plant of the Brockton Rand Co. and continued the business under same name.

*Lasters' strike.* In September, the machine lasters, numbering about 580 men, struck to enforce a new price list, and continued it against the Consolidated Hand Method Lasting Machine Co. because of its action in placing men at work upon the idle machines. Some factories shut down while in others work was continued by hand; and in still other instances, firms accepted the new price list with the reservation that it should stand if the lasters succeeded in having it adopted by all of the manufacturers. It was found impossible to secure the adoption of the new list and after exhausting all means, including arbitration, to secure a reasonable understanding the manufacturers declared for "free shops." This trial of endurance between the lasters and the manufacturers lasted six weeks and on October 26 the unions receded and ordered the men back to work on the old terms.

*Shipments.* The number of cases of shoes shipped during 1898, as compiled by the *Brockton Enterprise*, is presented in the following table, comparison being made with the shipments for the four preceding years:

MONTHS.	1894	1895	1896	1897	1898
January, . . . . .	25,975	35,238	33,465	28,249	38,818
February, . . . . .	30,591	37,006	36,110	37,417	38,510
March, . . . . .	47,586	48,416	40,556	40,038	46,576
April, . . . . .	39,642	42,734	42,150	49,834	57,015
May, . . . . .	37,801	49,709	51,242	33,113	36,218
June, . . . . .	40,187	37,370	31,681	24,991	29,041
July, . . . . .	21,940	28,914	30,455	30,383	38,672
August, . . . . .	38,864	43,056	33,100	39,255	43,187
September, . . . . .	33,473	35,073	40,029	41,033	56,121
October, . . . . .	35,861	30,915	43,787	45,678	31,299
November, . . . . .	41,301	35,805	28,850	37,637	39,748
December, . . . . .	30,815	20,527	22,950	34,112	36,769
TOTALS, . . . . .	424,036	444,763	434,375	441,750	491,974

It will be seen from the above table that the shipments for 1898 were 491,974 cases as against 441,750 cases in 1897, an increase of 50,224 cases, or 11.37 per cent. This increase is remarkable when it is borne in mind that, owing to the lasters' strike, shoe manufacturing was practically at a standstill during September and October. Figuring on the basis of 21 pairs to a case, the result shows that there were 10,331,454 pairs of shoes shipped during the year. Shipments for the past 19 years are shown in the following table together with the increase or decrease in each year as compared with the previous year, in number of cases and percentages:

YEARS.	Number of Cases Shipped	INCREASE (+) OR DECREASE (-) IN EACH YEAR AS COMPARED WITH PREVIOUS YEAR	
		Cases	Percentages
1880, . . . . .	189,490	-	-
1881, . . . . .	218,726	+29,236	+15.43
1882, . . . . .	261,657	+42,931	+19.63
1883, . . . . .	290,054	+28,397	+10.85
1884, . . . . .	326,858	+36,804	+12.69
1885, . . . . .	333,980	+7,122	+2.18
1886, . . . . .	361,584	+27,604	+8.27
1887, . . . . .	383,404	+21,820	+6.03
1888, . . . . .	422,282	+38,878	+10.14
1889, . . . . .	433,452	+11,170	+2.65
1890, . . . . .	469,607	+36,155	+8.34
1891, . . . . .	429,582	-40,025	-9.52
1892, . . . . .	428,241	-1,341	-0.31
1893, . . . . .	422,053	-6,188	-1.44
1894, . . . . .	424,036	+1,983	+0.47
1895, . . . . .	444,763	+20,727	+4.89
1896, . . . . .	434,375	-10,388	-2.34
1897, . . . . .	441,750	+7,375	+1.70
1898, . . . . .	491,974	+50,224	+11.37

It will be noted from the above table that while, on the basis of percentages, the largest increase is found in 1882 as compared with 1881, the percentage being 19.63, the largest numerical increase was in 1898 over 1897, the increase being 50,224 cases. The next largest percentage of increase is found in comparing 1881 with 1880 (15.43); the third

highest in comparing 1884 with 1883 (13.69); and the fourth highest in comparing 1898 with 1897 (11.37). In no other years did the percentage of increase exceed ten, except 1888 (10.86) and 1888 (10.14). The second largest numerical increase is found in 1882, the increase being 42,931 cases; the third in 1888, 33,573 cases; the fourth in 1884, 36,804 cases; and the fifth in 1890, 36,155 cases. The largest percentage of decrease is found in comparing 1891 with 1890, when business dropped suddenly from what has been known as the "Brockton boom year," the decrease being 8.52 per cent; and the largest numerical decrease is found in the same year, shipments falling off 40,025 cases.

In the following table, a comparison is made of the number of cases shipped and the value of boots and shoes turned out in 40 identical establishments each making a return for each of the years 1895, 1896, 1897, and 1898. The value of goods made, however, has no direct relation to the number of cases shipped, the combination being made simply to show the accuracy of the annual reports made by manufacturers to this Department, which is here fully substantiated by data drawn from widely different sources.

YEARS.	Number of Cases of Shoes Shipped	Value of Goods Made (40 establishments)	PERCENTAGES OF INCREASE (+) OR DECREASE (—) IN	
			Shipments	Value
1895, . . . .	444,763	\$15,125,777	—	—
1896, . . . .	434,375	15,029,088	—2.34	—0.64
1897, . . . .	441,750	16,019,094	+1.70	+6.59
1898, . . . .	491,974	17,331,246	+11.37	+8.19

From the above table it will be seen that in 1896 as compared with 1895, there was a decrease of 2.34 per cent in the number of cases of shoes shipped and a decrease of 0.64 per cent in the value of shoes manufactured in the 40 representative establishments. Comparing 1897 with 1896, an increase of 1.70 per cent in the number of cases of shoes shipped is found, and an increase of 6.59 per cent in the value of the product of the 40 identical establishments. The percentage of increase in shipments rose to 11.37 in 1898 as compared with 1897, and to 8.19 in value of goods made. Comparing 1898 with 1895 we find an increase of 10.61 per cent in the number of cases shipped and 14.58 per cent in the value of shoes manufactured by the same 40 establishments. As indicating the representative character of these figures we would point out that, according to the Census of 1895, there were 91 establishments in Brockton engaged in the manufacture of boots and shoes, cut stock and findings, and in repairing, the total value of goods made and work done in that year being \$17,759,125. The above 40 establishments produced in 1895, \$15,125,777 worth of boots and shoes (factory product), or, in other words, 43.96 per cent of the establishments produced 85.17 per cent of the total value of goods made and work done in 1895, and it is from such typical establishments that this Department receives annual returns.

**Brookfield.** In March, Chas. H. Moulton & Co., shoes, reduced wages; in August, suspended operations in cutting and stitching departments. *April.* Edward G. Gibson purchased plant formerly operated by R. P. Grant and made repairs; in June, started up with 25 hands. *June.* Mann & Stevens Woollen Co. started up Sagendorph Mill; in August, resumed operations after suspension on account of dull trade; in September, ran at one-half capacity; in November, started up on full time; later, picker house with contents destroyed by fire; to be rebuilt.—Employees of Parmenter Manufacturing Co., brick, struck because of failure of firm to pay in full; in July, settled; later, works shut down permanently. *September.* J. Rouselle, shoe counters, enlarged quarters.—Ferdinand Boucher, brick, suspended work for the season. *December.* John Clancy of Holliston, removed his shoe factory to this town.

**CAMBRIDGE.** In January, brick-drying plant of D. Warren De Rosay destroyed by fire; later, succeeded by John Gerry. *February.* Shirt factory of Walter F. Murray & Co. destroyed by fire. *April.* Morse & Whyte, wire, increased force and ran nights on government orders.—Plant of Boston Woven Hose & Rubber Co. damaged by fire; in August, assignees decided to continue manufacturing.—C. H. Badger & Co., furniture, burned out; removed business to New Hampshire. *May.* Curtis Davis & Co., soap, purchased land for improvement of plant. *July.* John Beardon & Sons, soap,

incorporated; capital stock, \$100,000. — Harrie N. Craig succeeded Robert H. Gove. *September*. Geo. R. Oliver sold out to Everett Plano Co. *October*. Plant of Geo. W. Gale Lumber Co. destroyed by fire. *November*. Storehouse of John F. Squire & Co. damaged by fire. *December*. Among the business changes of the year were the following: R. B. Brown & Co., dyeing, etc., succeeded James Brown, Jr.; George Close, confectionery, became incorporated as the George Close Co.; John A. Kennedy succeeded Rourke & Kennedy; Thomas Robinson & Sons succeeded Thomas Robinson; and John Wilfert succeeded D. Wiedermann & Co.

**Canton.** In February, Robert Draper's Sons, cottons, shut down indefinitely. *June*. Elijah A. Morse, stove polish manufacturer, died, aged 57 years. — Jas. S. Shepard, of the American Net & Twine Co., died, aged 83 years. *October*. Draper Bros. Co., knit goods, shut down to install electric light plant. — Knitted Mattress Co. reduced to half time and half capacity. — Joseph W. C. Seavey, formerly president Eureka Silk Co., died, aged 62 years.

**Charlemont.** In December, ore teamsters refused to accept reduction in wages.

**Charlton.** In September, J. O. Copp, woollens, resumed after shutdown for repairs. — Akers & Taylor, woollens, added new looms.

**Chelmsford.** In April, new addition to wool scouring plant of Geo. C. Moore completed; boilers from old mill set up in new mill and new boilers placed in old mill; work begun on second addition, 75 x 240 feet, three stories; Geo. C. Moore also succeeded to business of Silver & Gay Co. *December*. North Chelmsford Supply Co. added machinery and increased force.

**CHELSEA.** In February, Bartels & Phelan established manufacture of shoes. — Cutters at shoe factory of Chas. F. Kelly & Co. struck because of inauguration of fining system for imperfect work. *April*. Lewis & Boynton established manufacture of spring heels. — Magoun Leather Co. increased capital stock to \$40,000. — United States Foundry Co. shut down indefinitely. — Box factory of Geo. R. Hobbs destroyed by fire. *May*. Plant of Gay Head Brick Co. destroyed by fire. *December*. Corriveau & Flagg, leather, moved to this city from Worcester. — H. C. Starkey & Sons sold business to T. Martin & Bro. Manufacturing Co.

**Cheshire.** In April, A. S. Farnum & Bro., lime, incorporated as Farnum Bros. Lime Co.; capital stock, \$20,000.

**Chester.** In February, Berkshire Spar & Quartz Co. incorporated; capital stock, \$30,000. *September*. Hampden Emery & Corundum Co. opened up new mine; in October, built new kiln for vitrifying emery wheels and suspended temporarily because of breaking down of machinery.

**Chesterfield.** In July, Henry L. Eddy, gun tubes, resumed operations.

**CHICOPEE.** In January, Overman Wheel Co. resumed operations; in June, ran nights; in August, made repairs on boilers; in September, extended piece-work wage system; in October, began manufacture by new method, the separate parts of bicycles being let out to be made by contract. — Chicopee Manufacturing Co. reduced wages; in April, made improvements in napping room; in June, added machinery for manufacture of woollens; in August, added new machinery; in December, added new looms to replace those worn out. *February*. Spaulding & Pepper Co., rubber goods, closed out; assignee ran plant for few months to clean up material on hand; in October, sold at auction and leased from purchaser by Fiske Rubber Co., a new corporation with capital stock of \$33,000; later, repairs made and engine started up; regular work to begin Jan. 1, 1899. *April*. Lamb Manufacturing Co., machinery, reduced force; in September, began work on bicycles for 1899. *May*. Taylor, Bramley, & Co. incorporated as Taylor-Bramley Co.; capital stock, \$20,000. — Victor Sporting Goods Co. incorporated; capital stock, \$20,000. *June*. Boiler house of Dwight Manufacturing Co. damaged by fire; in August, shut down its several mills successively for one week; in December, No. 2 card room damaged by fire and 100 new looms added to plant. — Stevens Arms & Tool Co. added new machinery; in August, shipped goods to India and South Africa and put on night force; in October, began erection of new storehouse, 16 x 56 feet. *August*. Robert Andrews purchased factory for manufacture of reeds. *October*. Plant of Ames Manufacturing Co. sold at auction; in November, portion leased by the Cashin Card & Glazed Paper Co., of Springfield, for 10 years; in December, another part, the bronze and iron foundry plant, purchased by J. C. Buckley. — Coomes Brick Co. succeeded Connecticut River Brick Co.

**Clarksburg.** In April, Strong, Hewat, & Co. incorporated to manufacture woollen goods; in May, made arrangements with Blackinton Co. of North Adams for manufacture of samples; in August, took possession of Linwood Mills (which had suspended operations in May and been purchased by Berkshire National Bank of North Adams in July); in September, started up dyehouse.

**Clinton.** In January, Lancaster Cotton Mills began erection of new boiler house; in March, completed, and boilers set up. — W. B. Kendall, president Bigelow Carpet Co., died in Brooklyn, N. Y., aged 67 years. — Bigelow Carpet Co. began erection of new storehouse; operations resumed at woollen mill and mill No. 8; in April, shut down for a few days; in August, resumed after a shutdown of three weeks; in September, shut down portion of plant for two weeks; in October, resumed operations in Axminster department and added new trimming machine; in December, No. 4 weaving mill ran nights and woollen mill shut down for two weeks. — Work begun on new mill of Sterling Worsted Co., organized in December, 1897; in March, machinery arrived; in April, machinery set up; in May, began operations; in July, began erection of addition, of wood, 80 x 50 feet, one story; in October, installed electric lighting plant. *April.* Chas. A. Pratt, inventor of pneumatic tire, died, aged 70 years. *June.* Jas. A. Needham, formerly manufacturer of absorbent cotton, died in Waltham, aged 55 years. *July.* Clinton Worsted Co. began erection of addition to plant, 50 x 110 feet, two stories; in October, began erection of new office building; in November, lower mill closed permanently and machinery removed to new mill; in December, new mill started up. — Lancaster Cotton Mills set up electrical plant for motive power, and added new machinery.

**Colrain.** In January, Griswoldville Manufacturing Co., cottons, rebuilt Mill No. 2 damaged by explosion and fire in December, 1897.

**Concord.** In February, bluing factory of Geo. A. Conant destroyed by fire. *April.* Damondale woollen mill property sold at auction. *May.* Woollen mill fitted up at Concord Reformatory for purpose of making cloth used in State institutions; weaving to be done by hand.

**Conway.** In January, De Wolfe, Bagnell, & Co., shoes, shut down for stock taking; later, resumed; in March, Charles H. Bagnell retired and style changed to De Wolfe & Hassell. *July.* Tucker & Cook Manufacturing Co., cottons, removed finishing department, formerly located at Springfield, to this place; in October, contracted for new machinery. *December.* Delabarre Woollen Mill, leased for five years to John Fothergill, of Leeds, England.

**Dalton.** In January, Dalton Shoe Co. shut down for inventory; in June, began erection of addition to plant. *February.* Geo. W. Ruton, box toes, enlarged capacity. *June.* Old Berkshire Mills Co., paper, began erection of new boiler house and smoke-stack; in September, resumed operations after shutdown for repairs. — Byron Weston Paper Co. added machinery; in August, resumed operations after shutdown for repairs. — Hampden Woollen Co. shut down; in August, resumed operations; in October, shut down indefinitely. *November.* Byron Weston, the famous paper manufacturer, died, aged 66 years. *December.* New machinery added and more help employed at Renfrew cotton mill. — Geo. Booth's new mill completed and machinery set up.

**Dana.** In July, H. W. Goodman & Co., straw hats, incorporated as The Henry W. Goodman Co.; in September, began season's work. *August.* John E. Stowell, boxes, set up new boiler. — Crawford & Tyler, woollens, shut down for repairs; in October, resumed operations.

**Danvers.** In January, Joel Putnam, retired shoe manufacturer, died. *February.* L. E. Learoyd, morocco, resumed work after several months' shutdown; in March, Mr. Learoyd died, aged 55 years; in September, machinery sold; in November, factory leased by F. A. Pemberton of Peabody for manufacture of morocco. — Elijah Bradstreet sold rendering plant to Parmenter & Polsey Fertilizer Co. of Peabody. *May.* C. C. Farwell & Co., shoes, reduced force; in August, ran overtime; in October, shut down on account of dull trade. — J. E. Crosby & Co., shoes, shut down; in June, E. P. Fowle, formerly of Fowle & Daley, Salem, entered firm; style changed to E. P. Fowle & Co. — Wm. H. Stetson, shoe manufacturer, died, aged 64 years. *June.* Bernard & Friedman, leather, ran portion of plant nights. — W. H. Burns closed out business; later, plant sold to Geo. A. Creighton & Son. *August.* Eaton & Seams, shoes, resumed operations after shutdown of six weeks; in October, shut down indefinitely. — A. B. Clark, morocco, removed business to Pea-

body.—Heel factory of Colcord & Walcott destroyed by fire. *September.* Clapp & Tapley, shoes, resumed operations in cutting department; in October, ran on half time. *October.* Israel H. Putnam, retired shoe manufacturer, died, aged 80 years. *November.* Baker & Creighton, shoes, Lynn, removed to this place and reorganized as Geo. A. Creighton & Son.—G. W. Baker retired from business.

**Dedham.** In April, Merchants Woollen Mill added new press and boiler; in October, shut down on account of lack of orders; resumed, and shut down second time.—Cochrane Manufacturing Co., carpets, enlarged office building and made improvements; in July, made plans for enlargement of plant.—J. V. Abbott Manufacturing Co., machinery, enlarged office building.—William Bauer, baker, succeeded J. L. Schlattgen.

**Dighton.** In July, L. Lincoln & Co., paper, shut down temporarily. *October.* North Dighton Cotton Co. set up two new water wheels. *November.* Anchor Color Works shut down indefinitely.

**Douglas.** In January, American Axe & Tool Co. ran overtime. *September.* W. E. Hayward & Co., woollens, shut down two weeks for repairs; in November, changed from five-days time to full time.

**Dracut.** In April, Merrimac and Collins Mills, woollens, shut down for two weeks; in May, resumed operations; in December, ran on three-days time for part of month. *July.* Shoe factory of Brennan Bros. destroyed by fire. *October.* Solomon Bachman, owner Merrimac Woollen Mills, died, aged 72 years.

**Dudley.** In January, Josiah Perry, woollens, ran overtime.—John Chase & Son, woollens, incorporated as Chase Woollen Co.; capital stock, \$100,000.—Frederick T. Chase of Chase Woollen Co. died in New York, aged 54 years. *August.* Stevens Linen Works received new hydraulic mangle from Scotland; shut down for stock taking and repairs. *December.* Stevens Woollen Mill, owing to slack market, ran four days per week.—Chase Woollen Mill ran day and night on navy blue cloth for United States Government.

**East Bridgewater.** In August, Carver Cotton Gin Co. began running overtime.

**Easthampton.** In April, F. I. Brown & Son, wagons, incorporated; capital stock, \$12,000; later, decided to enlarge plant. *June.* Nashawannuck Manufacturing Co., elastic webbing, began erection of addition to factory; of brick, 40 x 75 feet, three stories; completed in August and machinery set up. *August.* Geo. S. Colton, elastic cord, ran three-fourths capacity.—Glendale Elastic Fabrics Co. enlarged warehouses and office buildings.—Ionic Knitting Co. added new machinery.

**Easton.** In February, G. M. Bailey established manufacture of shoes. *June.* Theodore Darling began erection of shoe factory.

**Enfield.** In March, Enfield Manufacturing Co., woollens, set up new looms and carding and spinning machinery; in September, added machinery and ran at three-quarters capacity. *April.* Woods & Ward set up machinery in new box shop.

**Erving.** In March, Washburn & Heywood Chair Co. resumed operations on ten-hours time; in June, dryhouse destroyed by fire. *June.* C. S. Stone, piano cases, retired from business.

**Essex.** In January, Hickey & Story started up new heel factory.

**EVERETT.** In March, New England Gas & Coke Co. purchased land for erection of plant; work of clearing ground and excavating for ovens begun.—G. W. Bent & Co., started up after destruction of mattress factory in Boston; later, moved back to Boston. *October.* A. H. Bolster, bread, sold to Frank W. Russell. *December.* During the year Geo. H. Faxon Co. succeeded to the piano hardware business of Faxon Manufacturing Co.—A. G. Whitcomb, monumental work, died; business closed up.

**FALL RIVER.** In January, Bristol Brewing Co. incorporated under laws of West Virginia; authorized capital, \$350,000; land purchased and plans made for erection of brewery, 118 x 130 feet.—Machinery at new Arkwright Mills set up and operations begun; in July, added machinery; in December, leased portion of its space to Hargraves Mill.—Fall River Machine Co. added new machinery; in July, undertook manufacture of new stop and filling device for ring frames, the invention of Simeon Berard.—Border City Mills added new machinery.—Kerr Thread Mills added new machinery for the manufacture of silkateen; in April, added new machinery; in August, made improvements.—King Philip Mills replaced mules by ring spinning frames; in Febru-

ary, improvements made in mill No. 1; in June, added new machinery. — Seaconnett Mills added new machinery; in November, made improvements in No. 2 mill. — American Printing Co. shut down two weeks for stock taking and repairs; in March, added new engine; in May, made specialty of goods in National colors for decorative purposes; in July, razed wooden structures of plant; in August, resumed operations on full time; in October, shut down for stock taking; in December, ran overtime to fill orders. — Slade Mills reduced capital stock from \$550,000 to \$55,000, and then increased to \$247,000; in November started up manufacturing after a shutdown of several months.

*February.* Fall River Iron Works Co. set up new machinery in carding room of mill No. 1; in April, posted notices of a shutdown; in May, shut down indefinitely on account of dull trade. — Pocasset Hat Co., organized in November, 1897, set up machinery in its new factory recently completed; in March, completed improvements and started up; in May, shut down for two weeks. — Flint Mills completed improvements; in March, added new elevators. — Temporary stoppages occurred to several departments at plant of Jesse Eddy Manufacturing Co.; in June, shut down on account of dull trade; in August, set wool sorters at work preparatory to starting up; in September, started up in full. — Shove Mills shut down for repairs. — Plant of Enterprise Brewing Co. destroyed by fire; to be rebuilt and operations to begin Feb. 1, 1899.

*March.* A pair of mules in use for 31 years at Conanicut Mills replaced by spinning frames. — Tecumseh Mills added new machinery. — Merchants Mill added new machinery; in May, shut down one week on account of dull trade. — Metacomet Manufacturing Co. shut down mule room for repairs; in May, shut down spinning department for curtailment of production; in August, started up a number of mules; in November, added new boiler.

*April.* Maplewood Mills started up the manufacture of absorbent and jewelers cotton. — Globe Yarn Mills shut down mill No. 3 a few days on account of dull trade; in May, added new machinery; in June, made further addition to machinery; in August, started up several mules. — Weetamoe Mills added new machinery. — Fall River Bleachery added new machinery; in August, let contract for new addition, 65 x 200 feet. — King Philip Brewing Co. began erection of plant. — Annawan Manufacturing Co. removed machinery from mill. — Sagamore Mill No. 2 damaged by explosion; in May, mill No. 1, shut down one week to curtail production. — Frank G. Stevens, president Stevens Manufacturing Co., died in Swansea, aged 71 years.

*May.* American Linen Co. shut down one week for curtailment of production. — Union Cotton & Wool Manufacturing Co. added new machinery. — James M. Osborn, cotton manufacturer, died, aged 76 years.

*June.* Covell & Osborn, incorporated as The Covell & Osborn Co.; capital stock, \$40,000. — Pocasset Manufacturing Co. made improvements in plant; in September, picker room damaged by fire; in October, made improvements in steam plant. — Chace Mills added new machinery; in November, ran with night force. — Robeson Mills reduced capital stock from \$260,000 to \$13,000, and then increased it to \$78,000; mills shut down entire year. — Hargraves Mills added new machinery; in July, added other machinery; in August, made improvements in plant; in October, ran overtime; in November, displaced mules and installed frames; in December, leased of Arkwright Mills space for 350 looms to use up surplus yarn. — James Marshall, hats, received government orders.

*July.* Bourne Mills (Tiverton, R. I.) paid the 18th semi-annual dividend to its employes (many of whom lived in Fall River), under its profit sharing system, amounting to two per cent; in December, the 19th semi-annual dividend of three per cent was paid, amounting to \$6 to \$10 for each operative. — Mechanics Mills added new looms.

*August.* Several mules at Davol Mills put in operation after period of idleness.

*September.* Barnaby Manufacturing Co. began erection of addition, 100 x 120 feet, one story; in November, blue-house department damaged by collapse of roof.

*October.* Wm. S. Parker, president of Parker Mills, died in Lowell, aged 81 years. — Cotton waste factory of N. & N. R. Lewis damaged by fire.

*November.* Granite Mills sent 14 of its common looms to Worcester to be fitted with a new shuttle-shifting device and warp-stop-motion. — Parker Mills adopted the system of night force in connection with day force. — Wm. Wadsworth, loom pickers, resumed manufacturing after a shutdown of four years. — Eagle Stove Foundry Co. leased works to Mechanics Foundry & Machine Co.; in December, works damaged by fire.

*December.* During the year James Marshall & Bros. succeeded to the hat manufacturing business of James Marshall; John Peacock succeeded William Peacock; Robert D. Douglas succeeded Douglas Bros.; and A. E. Winterbottom retired from business with no successor.

*Strikes during the year.* In January, new wage scale, announced in December, 1897, went into effect. This called for a reduction in all departments, including salaried em-



ployés, and was equivalent to 11½ per cent. Strikes occurred as follows: Hargraves, frame spinners, places filled; Iron Works, frame spinners, strikers returned; King Philip, weavers, returned; mule and ring spinners, departments shut down, strikers returned in February and in March; Laurel Lake, frame spinners, places filled; Narragansett, spoolers, places filled; and Shove, weavers, returned. Although the Barnaby Mills were not generally affected by the new wage scale, its weavers struck because of dissatisfaction with wages paid for a certain grade of work. In February, the employés in bleaching department of American Printing Co. struck because of reduction in wages. In July, spinners at Sagamore Mill No. 2 struck; settled. In August, a number of weavers at Border City Mill No. 2 struck for increased pay, and in September, the balance of the weavers in Mill No. 2, together with those of Mill No. 1, struck against reduction and the plant shut down for 12 weeks at which time the mill doors were opened and more applications for work were received than could be satisfied. In October, the weavers at Barnaby Mills struck against reduction in wages, and mule spinners at Hargraves Mills because of the employment of a night force; the latter strike was unsuccessful and many of the other mills adopted the plan of running nights with an extra force.

*Weavers' test case.* On November 3, the suit of Thomas Lawson vs. Union Manufacturing Co. was tried in the District Court. Lawson was a weaver who for some reason left his work and another weaver was put on his looms. When Lawson was paid he received no credit for three cuts which he claimed to have left on the eight looms which he had operated, and, backed by the Weavers Association brought suit to recover the price for weaving the amount of cloth left on the looms. According to the *Fall River News*, "It has been the common practice for a weaver, when newly employed for permanent work, to receive the benefit of any unfinished cuts on the looms. On giving up the looms he would receive no credit for cloth on the looms, his successor getting the benefit, as he did when he took the looms. This practice has been the cause of many disputes, and not a few suits. In such cases the weaver, retiring because discharged or for other reasons, usually claimed that he left on the looms more cloth than he found on them. . . . The Union Manufacturing Co. after having several cases of this kind, adopted a system of keeping account of the cloth left on the looms by retiring weavers. The amounts in issue in the suits were always small, the action being maintained on both sides to maintain a principle. The mill made nothing by the old practice, having to pay for all the cloth woven, and the thing averaged up evenly for the weavers, though frequently one was a small loser, his successor gaining what he had lost." Lawson claimed that the looms were empty when he took them, and that he left three cuts on them when he closed work. The second hand, for the defendant, produced his book of record and testified that there were three cuts of cloth on the looms when Lawson took them and 2½ cuts when he left them. The court found in favor of the defendant, holding that such books were books of record and admissible as evidence. This was questioned by the plaintiff and an appeal was taken but was dropped, so that the judgment and opinion which was rendered for the defendant in the District Court stands as the final disposition of the case.

*Print cloth statement.* At the close of 1897 there remained on hand 1,836,000 pieces of cloth as against 1,802,000 pieces in 1896, and the visible stock in the United States amounted to 2,800,000 pieces at the close of 1896 and 2,390,000 pieces in 1897. In no year for the past decade has the stock on hand at the close of the year reached these figures. As a consequence, it was necessary to curtail the production. The Fall River manufacturers tried to do all in their power to reduce the output, the curtailment beginning in June, 1898, when by agreement the following mills shut down: Durfee, Fall River, Laurel Lake, Slade, Stafford, and Wampanoag. In July, the following mills shut down one week: Chace, Davol, Durfee, Fall River, Globe Yarn No. 1, Laurel Lake, Metacomet, Narragansett, Sagamore, Slade, Stafford, Wampanoag, and Weetamoe. In August, the Fall River Cotton Manufacturers Association held a number of meetings to discuss ways and means. The plan originally proposed, viz: to have all the mills close for four weeks, failed. A majority of the manufacturers felt that a shutdown would not improve the unfavorable market conditions then prevailing. However, while the mill owners would not agree to shut down at any specified time they did agree to act independently of each other and curtail production at such times as it seemed best to them individually. From about the 19th of August until the first of November every print cloth mill in the city shut down a portion of the time each month, the length of the shutdown ranging from 13½ hours to two weeks. Early in the year the manufacturers declined to furnish the "Brokers Board" with the information relative to the production of print cloth, the sales, or the stock remaining on hand, so that we are obliged to omit this year our comparison of production for each month. Through the courtesy of a member of the manufacturers' committee on sales we are able to give the total production, sales, etc., which we present in the following comparison:

CLASSIFICATION.	NUMBER OF PIECES OF PRINT CLOTH						
	1892	1893	1894	1895	1896	1897	1898
Production, . . . .	10,045,000	9,065,000	8,478,000	11,090,000	10,055,000	10,648,000	11,500,000
Sales, . . . . .	10,759,000	7,119,000	8,331,000	9,871,000	7,819,000	10,470,000	13,332,500
On hand, close of year,	7,000	142,000	140,000	237,000	1,802,000	1,836,000	4,500
Stock in United States, close of year, . . .	9,000	340,000	211,000	464,000	2,300,000	2,390,000	500,000
Sold for future delivery,	2,850,000	950,000	1,300,000	1,125,000	1,001,000	1,144,000	1,800,000

It is readily seen from the above table that the system of curtailment adopted had the desired effect, the stock remaining on hand in Fall River being reduced to 4,500 pieces. Production in 1898 increased eight per cent over 1897, while sales increased 27 per cent in 1898 as compared with the previous year. In regard to the prices obtained during the year, the annual print cloth statement issued by Clinton V. S. Remington says, that at the opening of the year the price of regulars (28" 64 x 64) was  $2\frac{1}{4}$  cents. The market Jan. 5, declined to  $2\frac{3}{16}$ , which price held until March 16, when  $2\frac{1}{16}$  less one per cent was the figure; this price held but a few days and on March 25, sales at  $2\frac{1}{16}$  were made. This price also had a short life and on April 5 sales at two cents were made. By May 2, the price had declined to two cents less one per cent, and on the 6th of May,  $1\frac{1}{2}$  was the quotation, being the lowest price ever reached for "best extras" 28" 64 x 64. However, this price held but for a few days,  $1\frac{1}{16}$  being paid on the 14th and two cents on the 23rd of the month; the latter price ruled until August 29, when two cents plus one per cent was paid and on Sept. 8, sales at  $2\frac{1}{16}$  were made, this price holding until the 16th when a concession of one-half of one per cent was made, the quotation being  $2\frac{1}{16}$  less one-half of one per cent. On Sept. 19, the price dropped to two cents, this price holding until Oct. 20, when a sale was made at two cents less one-half of one per cent. The next day, however, the price returned to two cents and held steadily until Nov. 21, when  $2\frac{1}{16}$  was paid. During the next ten days, large sales were made at this price and the stock of "regulars" and kindred makes was practically cleaned out. On Dec. 1, the asking price was  $2\frac{1}{16}$  cents, and sales of odd goods were made on this basis, but "regulars" did not sell at this price until the 8th. On the 9th,  $2\frac{1}{16}$  was paid for a large amount and a few days later, Dec. 13,  $2\frac{1}{4}$  was reached. On the 15th, "odds" sold on a basis of  $2\frac{3}{8}$  for "regulars," but the price "on regulars" was not made until Dec. 21. Among notable points of the market was the continued depression of print cloths during 10 months of the year, resulting in a decreased production; the low price of  $1\frac{1}{2}$  cents reached May 6 (the lowest price ever made in the print cloth market); and the closing of the year with this market practically bare of staple goods. The same remark applies equally to all the print cloth sections of the country. In this connection it is of interest to note the highest, lowest, and average prices of print cloth since 1890, which are shown in the following table:

YEARS.	PRICES PER YARD OF PRINT CLOTH (64 x 64)		
	Highest	Lowest	Average
1890, . . . . .	3.563	3.000	3.344
1891, . . . . .	3.063	2.750	2.951
1892, . . . . .	4.063	3.063	3.418
1893, . . . . .	4.000	2.750	3.295
1894, . . . . .	3.000	2.599	2.763
1895, . . . . .	3.313	2.438	2.875
1896, . . . . .	3.000	2.438	2.600
1897, . . . . .	2.688	2.250	2.484
1898, . . . . .	2.375	1.875	2.063

**FITCHBURG.** In January, weavers at Nockege Mills, cottons, struck against reduction in wages; plant shut down; later, reduction accepted and operations resumed. — Fitchburg Machine Co. ran nights. *February.* Grant Yarn Co. completed addition, 45 x 75 feet, three stories. — Fitchburg Worsteds Co. built addition, 32 x 110 feet, two stories; in July, shut down portion of weaving department; in August, changed from half to full time. — Beoll Co., worsteds, shut down weaving department temporarily on account of dull trade. *March.* Putnam Machine Co. ran overtime; in August, shipped goods to Hawaiian Islands; in November, changes made in selling agency, and improvements made in plant. — Webber Lumber Co. incorporated; capital stock, \$25,000. *April.* Simonds Rolling Machine Co. shut down for balance of year. — Government contract for shells awarded to C. H. Cowdrey Machine Co.; portions of contract sub-let to C. H. Brown Machine Co. and L. H. Deane. — Fitchburg Paper Co.'s mill damaged by fire. — Employés of Parkhill Manufacturing Co. struck against reduction; later, accepted and work resumed. *May.* Chester F. Brown, carriages, died; business purchased by Orrin F. Lowell. — Brass foundry of E. J. Welch & Co. destroyed by fire; in June, began erection of new foundry. — Fitchburg File Works damaged by fire; in June, repaired and work resumed; in August, added new engine. *June.* Woollen mill belonging to estate of J. M. Valentine sold to D. J. Coughlin; company formed under name of Glen Woollen Co.; in July, repairs made; in August, manufacturing begun; in August, weavers struck because of dissatisfaction with pay. — Fitchburg Manufacturing Co., worsteds, shut down indefinitely. — L. H. Goodnow (Rollstone Iron Foundry) increased force and ran overtime on government contract. — Fitchburg Shirt Co. ran overtime on government contract; in July, increased force; in December, coal storage house damaged by fire. *August.* Star Worsteds Co. added two new boilers and built new chimney 76 feet high. — Fitchburg Cotton Mills ran at one-half capacity. *September.* Kuhn Machine Co. began erection of addition, 14 x 30 feet, one story; in October, produced new drilling machine, invention of Fred. L. Kuhn, capable of drilling seven holes at one time, 353-1000 of an inch apart. — Fitchburg Steel Ball Co. started up. — Employés of Iver Johnson Arms & Cycle Co. struck because of reduction in wages; in October, settled by compromise. *October.* Simonds Manufacturing Co. decided to remove band-saw department to Chicago. — Louis D. Bartlett, formerly president Putnam Machine Co. died, aged 73 years. — Wachusett Machine Co. succeeded Adjustable Saw Table Co.

**Foxborough.** In July, wool scouring plant of Alexander Ross destroyed by fire.

**Framingham.** In January, Dennison Manufacturing Co., paper goods, made plans for erection of new building of brick, 80 x 150 feet, three stories; in April, construction work begun; later, 15 operatives in bronzing department struck for advance in wages. — Saxtonville Mill added new looms for weaving blankets; in April, shut down indefinitely. *March.* Lasters employed by Gregory & Shaw struck for increase in wages; places filled by hand workmen. *August.* D. T. Bridges, retired boot manufacturer, died, aged 71 years. — Revere Confectionery Co. removed from Ashland and changed style to Revere Confectionery & Pop Corn Works.

**Franklin.** In January, Clark Bros., machinery, ran nights; in May, ran overtime with night force. *February.* Ray Fabric Mills added new machinery; in June, resumed operations after temporary suspension; in August, completed rebuilding of dye-house and carbonizing plant. — Waite Felting Co. built addition; in April, added new machinery and ran overtime; in June, ran on government orders. *May.* Edwin P. Bassett & Sons, straw goods, shut down for the season, reopening in September. — Wm. F. Ray of Ray Fabric Mills, died, aged 42 years. *June.* Ray's Woollen Co. ran on government orders; in July, shut down for vacation; in September, resumed operations. — H. T. Hayward, woollens, shut down for repairs and resumed on government orders; in September, installed new dyeing machinery. — Singleton Worsteds Co. shut down for repairs. *August.* Canning factory of J. B. Hopkins destroyed by fire. *October.* Franklin Knitting Co. ran on five-days time. *November.* The Rubber Reclaiming Co. organized and leased plant for five years. *December.* Saw and grist mill of Metcalf & Son destroyed by fire.

**Gardner.** In January, E. N. Hobby, wood working machinery, took partner and changed style to Gardner Machine Works. *May.* George H. Heywood of Heywood Bros. and Wakefield Co., rattan furniture, died in Maine. *August.* Conant, Ball, & Co., furniture, shut down for repairs. — Metal polish factory of E. A. Colby damaged by fire. — Herman G. Partridge succeeded A. H. Jaquith & Co.

**Georgetown.** In January, Pentucket Shoe Co. resumed operations after temporary suspension; in April, added McKay machines; later, shut down for stock taking. — Lasters at shoe factory of A. B. Noyes struck to resist cutdown; firm agreed to pay former price and operations resumed; in December, shut down one week for stock taking. *March.* Georgetown Boot & Shoe Co. added new machines; in August, added new machinery. *May.* P. & W. Cushion Sole Shoe Co. shut down for repairs. *July.* George W. Chaplin & Co. shut down for one week.

**GLOUCESTER.** In January, N. Richardsons' Sons, machinery, put in operation a machine for making wire hinges. *August.* Factory of Pigeon Cove Tool Co. damaged by fire. *November.* Stephen P. Andrews, of the O. T. Rogers Granite Co., died, aged 72 years. — Boston Oregon Mast Co. sold to Chas. H. Andrews. — James E. Bradley succeeded James S. Ayer.

**Grafton.** In January, Fisher Manufacturing Co. reduced wages. *March.* J. S. Nelson & Son Shoe Co. reduced running time. *April.* Farnumsville Cotton Mills reduced running time to four days per week; in May, shut down one week for repairs and resumed on full time; in July, shut down for one week; in August, damaged by fire; in October, shut down for one week; in November, shut down; work resumed latter part of December and full force employed. *May.* S. A. Forbush, shoes, resumed operations after three weeks' suspension; in July, shut down temporarily; in August, ran on short time. *July.* Saundersville Cotton Mills resumed operations after a two weeks' shutdown. — Finlayson, Bousfield, & Co., succeeded by Finlayson, Bousfield, & Co., Limited.

**Great Barrington.** In January, Stanley Instrument Co., organized in Dec. 1897 to manufacture electric motors invented by William Stanley, Jr., purchased land for factory; in April, construction work begun; later, building completed and in November a number of motors were manufactured and shipped to England. — Riverdale Mills ran nights to fill orders. *February.* Endrick Woollen Mills ran overtime; in May, shut down for six weeks; in July, started up; later, shut down few days on account of low water. *October.* Monument Mills started up several new looms and ran quilt department full.

**Greenfield.** In March, Warner Manufacturing Co., cutlery and baby carriages, let contract for rebuilding of factory destroyed by fire in November, 1897; in April, erection begun; completed in May and started up. *June.* Oakman Motor Vehicle Co. leased quarters for establishment of manufacture of horseless carriages, the invention of Mr. R. N. Oakman. *July.* Wells Bros. & Co., tools, shut down one week for repairs and alterations; new engine of 125 horse-power added; received orders for tools for navy from government of Japan. — Goodell Bros., cutlery, resumed operations after temporary suspension; new buildings completed and machinery set up; in September, purchased business of Goodell, Son, & Co. *October.* Emil Weissbrod & Son, pocket-books, made plans for addition to factory 30 x 50 feet. — Hale & Benjamin built shop for manufacture of blind-hinge. — Additions completed to Towle silver shops.

**Groton.** In January, Edwin H. Sampson, leather-board, shut down and remained idle entire year. *March.* Tileston & Hollingsworth Co., paper, began erection of new stockhouse.

**Groveland.** In October, Groveland Mills started up after a three-weeks shutdown for repairs; in December, shut down one week for stock taking, resuming on five-days time.

**Hamilton.** In September, dryhouse at Watson's starch factory destroyed by fire.

**Hampden.** In January, Hampden Mills Co., woollens, whose plant was damaged by fire in December, 1897, resumed operations in part; later, mill was damaged again by fire. *April.* John Kenworthy, blankets, added new machinery and constructed a basement under main mill for engine and finishing rooms.

**Hancock.** In October, John Taylor opened old woollen mill.

**Hanover.** In April, C. A. Mann, shoes, sold machinery and retired from business.

**Hardwick.** In January, repairs made at plant of George W. Wheelwright Paper Co.; in August, began erection of addition to pulp mill. — George H. Gilbert Manufacturing Co., woollens, reduced to half time in several departments; in September, resumed full time.

**Hatfield.** In June, Hugh McLeod purchased the Porter Machine Works from the bankrupt estate of Lewis Warner of Northampton.

**Haverhill.** In January, Patten Shoe Co. incorporated under Maine laws; capital stock, \$6,600; in August, removed to New Hampshire. — W. C. Lewis Shoe Co. incorporated; capital stock, \$20,000; in April, moved into new quarters. — Oliver C. Frost established manufacture of heels. — F. M. Hodgdon, shoes, added new machinery. — F. N. Livingstone & Co., heels, shut down temporarily; in May, moved into new quarters; in November, brought out a new heel with rand attached; it was made by a patent process the rand being put on without tacks, the heel being moulded afterward. — Chick Bros. reduced working time in cutting room to eight hours; in October, 15 lasters refused to work on men's shoes at the same price paid for women's, and struck. — W. W. Spaulding, shoes, reduced force; in April, made another reduction; in June, shut down different departments in turn for stock taking; in August, reduced wages. — Lasters employed by Noyes, Reed, & Co. struck for acceptance of new union price list; later, settled by compromise and operations resumed; in June, firm dissolved, business continued by Byron & Edson W. Noyes.

**February.** Box factory of John N. B. Green damaged by fire; later, business sold to Chas. W. Smith. — Geo. M. Pettengill, inventor of last-support for heeling shoes on the last, sold invention to McKay-Bigelow Heeling Machine Co. — Rufus D. Scott, machinist, purchased factory for manufacture of leather-seasoning machine, his own invention. — Perley Weeks, shoes, introduced a new line of goods; in August, reduced wages.

**March.** Webster & Tabor, shoes, purchased shoe stitching plant of Jennie A. Foster; in July, increased manufacturing space. — S. C. Bassett retired from business; no successor. — Levi M. Hall established manufacture of soles and heels. — Daniel A. Pettengill, patterns, retired from business; no successor. — Haverhill Novelty Paper Box Co. began erection of new building. — Thayer-Maguire Co., shoes, increased force; in November, received orders from newly acquired Spanish territory. — Wingate Shoe Co. decided to remove to Woburn; plant leased by Burlington Shoe Co. of Vermont. — C. M. Howe, shoes, discharged force. — Orlando Brown, inventor of several mechanical contrivances, died.

**April.** Soule & Cooper organized for the manufacture of shoe patterns. — Samuel Whitmore started up brick-yard for the season. — C. W. Arnold made improvements in office. — J. H. Winchell & Co., shoes, reduced force; in August, ran with two-thirds capacity; in November, shipped goods to newly acquired Spanish territory; added cutters to force; in December, shipped goods to London, Cape Town, Honolulu, Porto Rico, Manila, Trinidad, and Rio de Janeiro. — Gilman Bros., hats, discharged about 20 operatives because of refusal to accept price list offered by firm; in July, began erection of addition to factory; in August, 15 female employes struck for grievance. — Woollen mill of Alexander Roberts & Co. destroyed by fire; in May, new quarters leased and work resumed; in November, ran but eight of the 15 looms.

**May.** Kelley Bros. purchased land for erection of shoe factory, 50 x 100 feet, six stories; in June, work begun. — Millay Last Co. consolidated with J. H. Sutherland & Co. of Lynn. — Chesley & Rugg, shoes, ran nights to fill orders; in October, purchased building for enlargement of plant; in December, moved into new plant. — Tip factory of Harold F. Blake damaged by fire. — Employes of Kulpe Bros., shoes, struck because of new price list.

**June.** C. H. Hayes, boxes, set up two new boilers and made other improvements in power plant; in October, factory damaged by fire; in November, repairs made and work resumed. — John A. Lynch and Wiley & Brickett, shoes, moved into new quarters. — Thos. Doherty, shoes, sold out business. — Hussey & Hodgdon, shoes, shut down for inventory; in November, secured orders from newly acquired Spanish territory. — Corson & Chase, shoes, dissolved; business continued by D. P. Corson & Son; in July, new firm moved into new quarters. — Hanscom & Clark, cut soles, dissolved; business continued by Willis H. Hanscom.

**July.** John H. May & Co., shoes, dissolved; in September, Walter J. Page & Co. purchased tools and succeeded to business. — F. E. Young, shoe counters, purchased plant of J. E. Sumner and combined the two establishments. — W. B. Thom & Co., hats, ran on government orders; established private gas plant. — Alexander A. Hudson, heels, introduced use of hydraulic press for pressing sheet heeling. — Shoe factory of James H. Osgood damaged by fire.

**August.** P. N. Wadleigh, shoes, began erection of new factory, 50 x 150 feet, six stories; later, completed and occupied; in November, received orders for shoes from newly acquired Spanish territory. — Chas. K. Fox, shoes, took Alonzo B. Walker into partnership; in November, new shoe factory dedicated, new machinery installed, and

operations begun; succeeded to business of M. C. Foss. — Isaac Davis of Davis Bros., cut soles, died. — Thos. S. Ruddock of Thos. S. Ruddock & Son, shoes, died, aged 68 years; by his will, it was directed that the business be continued for five years.

**September.** A. A. Briggs, shoes, succeeded by Jennings, Briggs, & Tappan. — Geo. S. Smith, shoe manufacturer, died in New Hampshire. — Daniel B. Cluff, retired shoe manufacturer, died, aged 73 years. — Employés of Lowell, Lawrence, & Haverhill Street Railway struck because required to sign a bond of indemnity; places filled.

**October.** W. S. Chase & Sons, shoes, made improvements in office. — Haverhill Paper Co. set up new boilers; later, absorbed by the International Paper Co. — Stevens Woollen Mill shut down on account of lack of orders; in November, carding and spinning departments started up after a shutdown of five weeks. — Thos. S. Ruddock & Son, shoes, reduced wages; later, put on additional cutters; in December, cement shed damaged by fire; later, 15 employés struck through sympathy for a discharged fellow-workman.

**November.** New brewery completed; in December, operations begun. — H. B. Goodrich & Co. received orders for shoes from newly acquired Spanish territory.

**December.** Geo. W. Leighton, shoe manufacturer, died. — Among the business changes made during the year were the following: Tappan & Morse, cut stock, succeeded by Morse & Proctor; D. H. Evans incorporated as the Evans Bros. Shoe Co.; H. H. Hoyt incorporated as the H. H. Hoyt Shoe Co.; Chandler & Burnham, shoes, succeeded by C. W. Chandler & Co.; Arthur P. Tucker cleaned out stock on hand and closed up business; Hoyt & Fuller, cut stock, succeeded by B. B. Gilman & Co.; Moore & Clark doing business as Haverhill Wood Heel Co. succeeded by Poore & Bailey, style unchanged; L. B. Fitts succeeded to the business of J. E. Adams & Co.

**Shoe shipments.** The number of cases of shoes shipped during 1898, as compiled by the *Haverhill Gazette*, is given in the following table in comparison with the shipments of the four preceding years:

MONTHS.	1894	1895	1896	1897	1898
January, . . . . .	26,295	29,857	38,709	41,190	38,981
February, . . . . .	27,867	29,519	34,411	43,176	40,509
March, . . . . .	41,090	47,275	36,668	44,365	54,816
April, . . . . .	31,946	42,056	47,672	51,858	39,020
May, . . . . .	31,514	51,276	33,361	34,939	20,200
June, . . . . .	35,293	31,599	30,706	28,679	33,350
July, . . . . .	20,993	20,704	29,694	29,923	24,125
August, . . . . .	27,939	23,500	22,688	22,621	24,090
September, . . . . .	22,906	20,356	21,617	32,638	30,966
October, . . . . .	23,937	20,347	26,327	25,156	24,873
November, . . . . .	27,863	25,546	21,227	25,083	25,935
December, . . . . .	30,160	23,875	43,143	42,734	39,466
TOTALS, . . . . .	347,803	366,910	386,123	421,862	396,281

The figures for 1898 indicate a decrease in shipments, and, by assumption, a decrease in manufacturing. The beginning of the depression is plainly marked by comparing April with the month of March. The total decrease in 1898 as compared with 1897 was 25,581 cases, or 6.06 per cent. Reckoning 40 pairs to a case, there were shipped in 1898, 15,851,240 pairs as against 16,874,480 in 1897.

**Hinsdale.** In April, Hinsdale Woollen Co. ran portion of machinery on full time; in June, made repairs; in July, shut down for repairs; in August, resumed operations; in September, ran on five-days time; in November made additions to its automatic sprinkling system.

**Helbrook.** In March, Dexter E. and Everett Wilbur withdrew from White-Wilbur Shoe Co. **May.** J. W. and William Chessman established the manufacture of heels. — Samuel A. Vining, retired shoe manufacturer, died, aged 86 years; Mr. Vining had been engaged in shoe manufacturing for 50 years. **July.** Thomas White, retired shoe manufacturer, died in Newton, aged 82 years; Mr. White began shoe manufacturing in 1839.

*August.* Howard, Platts, & Paine Co., shoes, retired from business; no successor. *September.* Whitcomb & Paine Co., shoes, changed from machine to hand lasting pending settlement of strike of lasters at Brockton; later, resumed work on machines.

**Holden.** In March, Cyrus G. Wood, operating woollen plant known as Quinapoxet Mills, died in Worcester, aged 78 years; later, company organized under name of C. G. Wood Co. to run plant. *April.* Jefferson Manufacturing Co. added new boiler and made improvements. *October.* Dawson Manufacturing Co. made improvements in plant. *December.* James Dorr, operating Glen Woollen Mill, reorganized as Glen Woollen Mills Co.

**Holliston.** In May, harness factory of Hughes & Co. destroyed by fire; in June, contract for rebuilding awarded. *November.* Holliston Yarn Mill resumed work after a short shutdown.

**HOLYOKE.** In January, Beebe, Webber, & Co., woollens, leased quarters formerly occupied by Keating Wheel Co. for enlargement of plant; in June, received government orders.—Coburn Metallic Bed and Pneumatic Tube Co. incorporated; capital stock, \$10,000; in May, began manufacturing.—Smith & White Manufacturing Co., paper, purchased land for new mill; in March, began erection of new mill 250 x 300 feet, three stories.—Alexander McCallum withdrew from McCallum—Constable Hosiery Co. and style changed to Wm. Constable Hosiery Co.; in August, the former owner re-purchased the business and changed name to McCallum Hosiery Co.—Lyman Mills, cottons, reduced wages in every department; in April, added new engine to electric plant; in May, began construction of new engine house; in August, added new engine.

*February.* Ford Bit Co. started up factory.—Beebe & Holbrook Paper Co. made improvements; in April, made improvements in water-power plant.—Holyoke Warp Co.'s employes struck for increase in wages; in April, built new storehouse; in August, added new machinery.

*March.* Massasoit Paper Manufacturing Co. added new filtering apparatus.—Jenkins Rubber Co. removed to Elizabeth, N. J.—J. E. Brown Co., comfortables, decided to move to Westfield.

*April.* Springfield Blanket Co. added new looms and electric light plant.—Purcell Envelope Co. awarded government contract.—Taylor Manufacturing Co. purchased mill at Hartford, Conn.; in August, made plans for three-story addition.—Farr Alpaca Co. reduced force; in August, shut down portion of plant.

*May.* National Blank Book Co. received government orders; new mill constructed costing about \$90,000.—Parsons Paper Co. made improvements in plant.—Newton Paper Co. damaged by fire.

*June.* Deane Steam Pump Co. made additions to machine shop.—Chemical Paper Co. set up two new boilers; in August, conducted successful experiments in new process of making paper boards in which the colors and patterns were woven into the board from the pulp; in December, absorbed by the wood pulp trust.

*July.* Hampden Canning Machine Co. incorporated; capital stock \$5,000.—Whiting Paper Co. began erection of new boiler house; in October, set up new steam plant.—Riverside Paper Co. set up new water wheel; in October, shut down one week on account of dull trade.—Hampden Glazed Paper & Card Co. shut down for repairs in boiler room; in October, set up new steam plant.

*August.* Merrick Thread Co. added new machinery; in September, conducted successful experiments in "mercerizing" cotton.—Germania Mills, woollens, ran on five-days time.—Chadwick Plush Co. shut down portion of plant.—Connor Bros., woollens, ran overtime; weavers objected and struck.

*September.* Holyoke Paper Co. began erection of addition to plant for finishing photographic paper.—Hadley Co. conducted successful experiments in "mercerizing" cotton.

*October.* National Shear Co. purchased plant of Henry Seymour Cutlery Co. and closed factory permanently; plant had been idle all the year.

*November.* No. 1 mill of Nonotuck Paper Co. sold to new company known as The Ealeeck Paper Co.; operations begun and addition constructed.—B. F. Stevens & Son purchased the Pearl City Paper Mill, South Hadley.—Ross, Burgin, & Hartzell purchased plant and began manufacture of bicycles.—Fenton & Dunn, carriages, dissolved; succeeded by Fenton & Son.

*December.* Chas. R. Greuter received an order for 50 motor carriages from France, and made arrangements to have the parts manufactured at the different machine shops.—Beside the additions and repairs enumerated above, the Connecticut Valley Lumber

Co. added new boilers; Albion Paper Co., new boiler house and boilers; Newton Paper Co., new boilers; and Shannon Manufacturing Co., new shop.—The United States Envelope Co. absorbed the Holyoke Envelope Co.

**Hopedale.** In June, Draper Manufacturing Co. operated on summer time schedule; in September, filled order from Russia for 100 looms.

**Hopkinton.** In January, Cloutman, Dunham, & Co., shoes, removed business from Concord to this place; repairs made on boiler of new plant.—Crooks, Root, & Co., shoes, shut down for inventory; wages of stitchers reduced; in April, suspended two weeks for repairs. *May.* Woodville Shoe Co. ran on half time. *October.* Ashaway Woollen Co. incorporated to manufacture woollen, worsted, and cotton cloth; capital stock, \$100,000. *December.* Marcus C. Phipps, boxes, succeeded by Fred. H. Claflin.—Thos. A. Cushman moved to Whitman.

**Hubbardston.** In January, Star Blanket Manufacturing Co. purchased factory in Leominster for manufacture of special line of goods; no manufacturing done in Hubbardston during 1898.

**Hudson.** In January, Hudson Spinning Co. began manufacture of yarns with from 40 to 50 employes.—F. Brigham & Co., shoes, began running on eight-hours time after temporary suspension. *June.* Hudson Worsted Co. added machinery.—Holden Brothers established the manufacture of bread, cake, and pastry.

**Huntington.** In August, Highland Mills, woollens, shut down on account of lack of orders; in November, mills sold to new corporation, Massasoit Woollen Co., with capital stock of \$40,000.

**Hyde Park.** In April, shoddy mill of T. H. Gray & Co. damaged twice by fire; repaired; in October, ran on four-days time; in December, dyehouse destroyed by fire. *July.* Main building of Brainerd Milling Machine Co. destroyed by fire.

**Ipswich.** In January, L. H. Daniels, shoes, shut down indefinitely; in March, effort made to organize stock company to operate the factory; in April, stock and machinery sold at auction.—Grain mill owned by George B. Brown destroyed by fire. *May.* Globe Match Co. of Portland, Me. leased factory. *July.* Ipswich Mills, knit goods, began erection of new picker house.

**Lancaster.** In November, Lancaster Manufacturing Co. added new machinery and ran nights.

**Lanesborough.** In October, Berkshire Glass Co. resumed operations after suspension.

**LAWRENCE.** In January, Beaudry Edge Setting Machine Co. removed from Lynn to this city.—Crescent Worsted Co. completed addition; in April, ran nights to fill orders; in November, after running day and night, shut down last of month for three days.—Arlington Mills, set up machinery in new mill and began operations; in April, increased capital stock \$500,000; also shut down portion of plant to curtail production; in May, received government orders, resumed work in full, and ran nights; in July, made alterations and added new looms; in August, shut down weaving and burling departments temporarily; in October, shut down temporarily in several departments; in December, ran cotton department day and night, and worsted department ran three and four days per week.—Lawrence Duck Co. added new spinning frames; in June, damaged by fire; in November, ran on three-fourths time and added new machinery.—Everett Mills fitted looms with new warp-stop-motion; in August, installed new machinery and shut down for repairs; card and picker rooms resumed after two weeks' suspension; in September, ran full force on full time; later, ran on short time, in December, resumed work with full force on full time.—Alexander B. Bruce sold cracker manufacturing plant to National Biscuit Co.—Emerson Manufacturing Co., machinery, reduced force in molding department.—Atlantic Cotton Mills reduced wages; in March, added new machinery for the manufacture of yarn; in November, added new looms; in December, ran with full force on full time.—Pacific Mills reduced wages; in March, ran print room on short time on account of dull trade; in April, shut down portion of plant to curtail production; in May, received government orders and resumed on full time; in July, shut down for curtailment and resumed in printing and worsted departments after two weeks; in October, enlarged print-works department; in November, shut down two days; in December, ran with full force on full time.



*February.* C. N. Perkins & Co., carriages, sold out. — Bacon Paper Co. shut down for balance of year. — Frederick Butler began erection of new mill, 64 x 124 feet, three stories; in August, machinery set up; in October, plant leased to Franklin & Marcus Butler; business conducted under name of Butler Worsted Co.

*March.* E. E. Burnham & Co., leather belting, succeeded by Leland Belting Co. — Stanley Manufacturing Co., shoe machinery, reduced force.

*April.* E. Frank Lewis, wool scourer, resumed after shutdown of two weeks. — Washington Mills shut down portion of plant to curtail production; in May, received government orders and resumed in full; in July, ran portion of plant nights; in August, shut down drawing room few days on account of scarcity of wool; in October, resumed full time in all departments; in December, ran with full force on full time.

*May.* Hampshire Worsted Co., organized in April with capital stock of \$4,500, started manufacturing. — Pemberton Mills ran nights on government orders; in November, added two new cotton dryers. — John W. Barlow Co. (Spickett Mills) loom pickers, destroyed by fire; started up in another building; in July, new motor added and operations resumed; in October, began erection of new factory building on site of one destroyed. — B. Mahoney, monuments, shut down for balance of year.

*June.* Lawrence Knitting Co. incorporated under Maine laws, purchased plant of company of same name in Methuen, and removed to this city; in July, began manufacturing; in November, ran on one-third time. — L. Sprague Co., bobbins, built new boiler house and set up two new boilers. — J. H. Horne & Sons Co., machinery, ran nights. — Mason Safety Tread Co.'s factory damaged by fire; in December, shipped goods to Dominion Cotton Mills, Montreal, Canada. — Factories of Lawrence Spindle & Flyer Co., Robert M. Smith, webbing, Dillon Machine Co., and Lamson Store Equipment Co. damaged by fire.

*July.* Russell Paper Co. sold property to the new paper combination, International Paper Co. — Geo. E. Kunhardt, built two-story addition to storehouse. — Box factory of D. W. Pingree Co. damaged by fire. — Warren C. Craig, inventor and manufacturer, died, aged 50 years.

*August.* C. T. Daniels started in new Sultan Mills to manufacture towels.

*September.* Farwell Bleachery built two-story addition.

*October.* David Nevins, president Pemberton Co., died in Germany. — Aaron Hobart, president Lawrence Duck Co., died in East Bridgewater.

*November.* John E. Dustin, doing business under style of Dustin Machine Co., died, aged 63 years; business continued by Geo. W. Hamblett.

*December.* Geo. M. Murray, doing business under style of Butler File Co., died, aged 61 years; business continued under same style by A. S. Murray, administratrix.

*Lee.* In March, Smith Paper Co. set up three new boilers and water wheel at Columbia Mill; in May, made repairs at Valley Mill; in July, shut down Eagle Mill for repairs; in October, reconstructed dam at Valley Mill. *June.* Orville F. Jermain purchased shoddy mill formerly operated by Geo. T. Bostwick, and made repairs; in August, completed repairs; in September, mills destroyed by fire; in October, leased quarters in Springfield for re-establishment of business; in November, property at this place sold at auction. *August.* Stone cutters employed by Gray & Sons struck on account of grievance; settled. *December.* W. H. Gross sold out to Lee Marble Works. — During the past year an addition was built on the Westinghouse electric plant and an addition to plant of Standard Oil Co.; Lee Electric Co. remodeled the Decker Mill and established an electric plant; and repairs and additions were made by Hurlburt Paper Co., Baird Paper Co., Eaton, May, & Robbins, and Eaton, Dikeman, & Co.

*Leicester.* In May, Joseph Murdock, of J. & J. Murdock, card clothing, died, aged 79 years. — L. S. Watson of L. S. Watson Manufacturing Co., machinery, died, aged 84 years. *June.* Chapel Mills Manufacturing Co., woollens, ran two sets of men eight hours each, 16 hours per day; in July, continued night work; later, resumed regular time; in September, began erection of new mill; in October, mill completed and new machinery added; in November, started on full time. *July.* J. D. Clark Co., woollens, resumed operations after shutdown of three weeks. *September.* A. W. Darling (Bottomly Mills), resumed operations after a shutdown of six weeks. — A. Howarth & Son, woollens, made improvements. — E. D. Thayer, Jr., resumed on full time. — E. A. Butler, woollens, shut down for two weeks on account of dull trade. — During the early part of the year Comins & Co. removed to Oxford.

*Leominster.* In January, Star Blanket Manufacturing Co. of Hubbardston purchased Sawtelle factory for manufacture of special line of goods. — Whitney Carriage Co. in-

stalled an electric plant for motive power; in April, began erection of addition; in July, shut down two weeks for stock taking. — Furniture factory of N. C. Boutelle damaged by fire; in April, shut down indefinitely; later, plant purchased by Newton B. Boutelle. *February.* Leominster Worsted Co. began erection of addition to accommodate 38 additional looms; in May, completed enlargement of plant; in June, added new machinery. — Factory of Novelty Wood Works, H. E. Bartlett, proprietor, destroyed by fire; land purchased for erection of new plant; in April, began erection of new factory. — E. M. Rockwell, woollens, reduced working hours on account of dull trade. — Jewett Piano Co. ran on five-days time; in June, resumed after temporary shutdown. *May.* Tenney & Porter, shell goods, shut down for improvements. *June.* Wachusett Shirt Co. received government orders; in July, shut down for stock taking. — George A. Gane, shirts, shut down for annual vacation. *July.* Wellington Piano Case Co. resumed operations after temporary suspension. — Leominster Shirt Co. shut down for stock taking; in December, cutters given a vacation of two weeks. *September.* Leominster Horn & Supply Co. conducted experiments in consuming waste at plant. *November.* Machine room of J. H. Lockey Piano Case Co. shut down for installation of new engine. *December.* Whitney-Reed Chair Co. shut down two weeks for stock taking.

**Littletton.** In January, weavers at suspender factory of Conant, Houghton, & Co. struck for an increase in wages; settled by compromise; in July, operations suspended for one week.

**LOWELL.** In January, Massachusetts Mohair Plush Co. began operations in new addition, begun in December, 1897. — Shoe goring business of W. F. Copson, Sr. purchased by W. F. Copson, Jr. and Wm. M. Rogers who continued business as Bradshaw Manufacturing Co.; elastic web weavers struck against reduction in wages; in November, business taken by Mrs. W. F. Copson and reorganized as Lowell Goring Works to start Jan. 1, 1899. — Consumers Brewing Co. changed title to Harvard Brewing Co. — Geo. E. Galer, builders' finish, closed out; Bean & Dunbar, successors. — Cotton mills made a general reduction in wages. — Lowell Manufacturing Co., carpets, completed new dye-house and ran on short time; in April, shut down for two weeks; in June, shut down for curtailment of production; in July, resumed operations; in September, installed new boiler plant and shut down for one week; in October, added new spinning frames; in November, ran weaving and finishing departments on full time and carding and spinning departments on four-days time. — Beaver Garment Co. closed out; no successor. — J. S. Kimball sold print works to Wm. Melkielejohn who conducted business as Edinburgh Print Co.; in September, machinery sold; no successor. — Hand shavers employed by White Bros. & Co. struck against a proposed reduction in prices paid for shaving skins by hand. Firm said they intended to set up machines to do the work in question; the machines, however, did not meet with the requirements of the firm and the State Board of Arbitration was called upon to adjust the matter. The Board reported that it could find no sufficient reason for any reduction, nor would it recommend any advance on existing prices, but suggested that, "whatever be the method or system of grading, the same wages be paid as before the proposed reduction." The decision of the Board was accepted by both parties to remain in force for one year from March 14.

*February.* Faulkner Mills, woollens, added new line of goods to product. — Employes of J. M. Stover, shoes, struck because of alleged reduction in wages; employer absolutely refused to submit the matter to arbitration or re-employ strikers. — H. R. Barker Manufacturing Co., machinery, destroyed by fire; in March, erection of new plant begun; in August, building completed and occupied.

*March.* Lowell Machine Shop began manufacture of worsted preparing and spinning machinery; in June, added woollen machinery to product of plant; in July, added new compressed-air engine to foundry equipment; in December, pattern room damaged by fire. — Merrimack Manufacturing Co., cottons, purchased land in Georgia for erection of additional plant; in April, announced shutdown. — United States Cartridge Co. increased force; in May, added new machinery and ran nights on account of government orders.

*April.* New England Motor Co. incorporated to manufacture electric motors; capital stock, \$10,000. — Tremont & Suffolk Mills, cottons, operated No. 10 mill nights; in August, installed new machine, the invention and product of Kitson Machine Co., capable of blowing cotton from the opening room under the mill, across under the street, and up into the top of a five-story mill where the pickers were located; employes of yarn rooms struck for increase in wages; later, returned at the same rate; in September, ring spinners and back boys struck; in October, ran nights; in November, added new looms. — Whittier Cotton

Mills announced a reduction in wages; in November, shut down seamless-pocket department indefinitely.

*May.* Middlesex Co., woollens, ran nights on government orders; in September, ran on additional government orders. — New England Bunting Co. ran on government orders; in June, added new machinery and began enlargement of plant.

*June.* Red Seal Manufacturing Co., toilet articles, removed to Attleborough. — T. C. Entwistle, machinery, shipped goods to Mexico; in November, ran overtime. — Hamilton Manufacturing Co., cottons, ran on line of patriotic goods; in September, back boys struck; in November, installed new cotton-breaking machine. — Massachusetts Cotton Mills made improvements in machinery; in July, added new machinery; in September, back boys struck. — Kitson Machine Co. increased working time; in November, put on extra men.

*July.* Butterfield Printing & Binding Co. sold to McIndoe-Butterfield Co.; in December, part of plant moved to Rhode Island, balance sold.

*August.* A. P. Bateman, wooden goods, died; business closed out; no successor.

*September.* Carders and back boys in Boot Cotton Mills struck.

*October.* Pickering Knitting Co. received orders from Manila. — Plant of Atherton Machine Co. offered for sale.

*November.* Appleton Co. changed over its spindles and made contract for new engine and boilers. — Lowell Bleachery shut down for 10 days. — Fire damaged wood-turning shop of Geo. L. Cady & Sons.

*December.* Belvidere & Sterling Mills started on 85-hours time. — John Pevey, connected with the Foss & Pevey top-flat card, died, aged 61 years. — During the year the following business changes occurred: Woods, Sherwood, & Co., succeeded by The Woods-Sherwood Co.; Hoyt & Phillips, succeeded by Frank Hoyt; and Frank McCartin was succeeded by Mrs. Frank McCartin.

**Ludlow.** In December, work on new machine shop of Ludlow Manufacturing Co. completed and contract awarded for new boiler house, 54 x 54 feet.

**LYNN.** In January, Faunce & Spinney, shoes, added new eyeletting machine, a recent invention; cutters struck because of reduction in wages; places filled; in March, lasters struck because of grievance; settled. — Merrill Bros. & Co., succeeded by Merrill & Redman; in April, dissolved, Geo. D. Merrill taking partner and continuing as Merrill Bros., later, moved into new quarters; in December, E. E. Redman established manufacture of shoes. — Newhall & Upham, Ed. J. Phelan, and Walter E. Sisson established manufacture of shoes. — George E. Nicholson, shoes, took partner and changed style to Geo. E. Nicholson & Co.; in June, leased additional quarters; in November, added new machinery. — Patrick Lennox of Peabody purchased plant equipped for manufacture of morocco. — Wilson & Johnson fitted up stitching room and ceased contract work in that line. — M. V. Bresnahan Co., shoe machinery, and Thos. L. Spencer & Co., shoes, increased space. — Strout, Sager, & Co., shoes, and Lynn Heel Co. moved into larger quarters. — Harry H. Beckwith retired from shoe firm of Copeland & Co. — Beaudry Edge Setting Machine Co. removed to Lawrence. — Joseph Dickinson, slippers, added new turn-sewing machine; in July, moved into new quarters. — Welch & Landrean, shoes, added new lasting machines; in July, shut down for one week; in September, increased facilities; in December, added new machinery and enlarged quarters. — Bailey, Curtis, & Co. established manufacture of shoes; in November, stitchers struck against reduction; later, settled by State Board of Arbitration, prices remaining as before the strike. — Mark J. Worthley, shoes, reduced wages in several departments. — Lasters in shoe factory of Geo. C. Davis Co. struck because of reduction in wages; settled by arbitration; in April, firm began removal of plant to Boston, Roxbury District; in June, completed removal. — Lasters at factory of Hennessey Shoe Co. struck because of reduction in wages; settled by State Board of Arbitration; in June, began erection of new factory; in September, factory completed and occupied. — Lasters employed by A. & A. D. Fisher, shoes, struck against reduction in wages; firm established a "free shop;" in July, moved into new quarters. — Carpenters employed on government building struck to enforce union scale of wages; demands granted and work resumed. — Tinsmiths in employ of May & Co. struck because of dissatisfaction with wages. — Seth D. Tripp of Tripp Giant Leveler Co. died, aged 72 years; Mr. Tripp was the inventor of the first machine used in shoe manufacture and his inventions revolutionized the industry.

*February.* New shoe manufacturing firms established: Hebert Shoe Co.; A. M. Creighton, and L. J. Richard. — J. C. F. Phinney, cut soles, enlarged quarters. —

Libby & Estes, shoe stains, moved into new quarters. — Gardiner, Beardsell, & Co., counters, ran nights; in November, enlarged quarters. — General Electric Co. ran nights; in March, chippers struck for increase in wages; in May, received government orders and made arrangements for enlargement of plant; in August, began erection of addition. — Lasters at factory of Copeland, Eldridge, & Co. struck because of grievance; in May, factory ran nights. — F. B. Abbott Co., shoes, petitioned to dissolve; in March, dissolved and F. W. Abbott succeeded.

*March.* American Slipper Co. organized to succeed Lynn Slipper Co.; later, shut down for balance of year. — Morrill Shoe Co. formed. — P. P. Sherry, shoes, took partner and changed style to P. P. Sherry & Co. — C. D. Pitts, heels, sold business to New York Counter Co.; later, C. D. Pitts Co. formed to manufacture heels. — Atkins, Hoyt, & Co., shoes, succeeded by Bacheller & Hoyt; in June, Bacheller & Hoyt and Breed & Clapp dissolved and new firm, Breed & Bacheller, formed. — Lyman O. Berry, shoes, moved into new quarters. — Chase & Lister, cut stock, dissolved; business continued by H. E. Chase. — American Ordnance Co. increased force and ran nights on government orders; in November, forge shop damaged by fire. — Lydia E. Pinkham Medicine Co. made plans for erection of new buildings. — Lasters at factories of Harney Bros. struck because of grievance. — Kelley & Green, leather, ran overtime; in April, glaziers struck because of grievance; in August, firm dissolved, business continued by Thos. A. Kelley & Co.

*April.* Thos. Corcoran & Son, shoes, admitted Jas. R. Donovan to partnership. — Chas. W. Varney, shoes, increased space. — A. F. Smith, shoes, ran portion of plant overtime; in December, incorporated as Aaron F. Smith Co.; capital stock, \$75,000. — G. Edwin Smith, shoes, removed plant to Columbus, Ohio. — Daniel E. Newhall withdrew from firm of F. E. Newhall & Co., shoe tips; business continued under same style; in July, assigned; in September, succeeded by Fred. A. Phillips. — Shillaber & Co., shoes, discontinued manufacturing; no successor.

*May.* Belonga & Leonard, shoes, set up new line of machinery; in December, enlarged quarters. — H. M. George & Co., cut soles, dissolved; succeeded by C. J. Philbrook. — Hurley & Cashman, shut down for stock taking; in June, 16 lasters struck for increase, work was resumed pending settlement by State Board of Arbitration; in July, Board decided that an increase of one-half cent per pair should be allowed; decision accepted by both parties; later, firm dissolved and a corporation formed as The Hurley Shoe Co., and a private firm under the style of Cashman & Hebert. — McBrien Bros., shoes, went out of business. — Lucien Newhall, retired shoe manufacturer, died, aged 78 years; also, H. M. George of H. M. George & Co., aged 68 years; and John B. Renton of J. B. Renton Co., heels, aged 52 years. — By death of T. Kiley of T. Kiley & Sons, firm dissolved and business discontinued for balance of year.

*June.* New shoe firms established: Standard Shoe Co.; Daniel J. Herlihy; and Elastic Bicycle Boot Co., capital stock, \$60,000. — Erection of new shoe factory begun by Augustus A. Hermet; 36 x 40 feet, two stories. — W. H. McFarlane & Co., cut soles, purchased business of Willis W. George; to carry it on separately in addition to own. — Cobb & Putnam, shoes, Thomas H. Bresnahan, morocco, and A. W. F. Handy, tips, moved into new quarters. — Richard Nagle, shoe manufacturer, died, aged 38 years.

*July.* Lynn Cork Co. established manufacture of cork soles. — Thos. H. Bresnahan, morocco, and Wallace B. Phinney, cut soles, moved into new quarters.

*August.* Work begun on new shoe factory for A. E. Little & Co.; brick, 42 x 65 feet, four stories; in October, firm set up machines to do work formerly done by hand sewers, who struck for higher wages. — Libby & Snook established to manufacture box toes of canvas. — John Nickerson entered firm of Tucker & Emerson, findings; style changed to Tucker, Emerson, & Co. — W. E. Newhall closed out; no successor. — Hilliard & Merrill, cut soles, leased additional quarters. — P. H. & W. H. Nourse, counters, dissolved; succeeded by Phineas H. Nourse & Co. — Consolidated Hand Method Lasting Machine Co. ran nights. — Brophy Bros. Shoe Co. moved into new quarters. — About 15 cutters employed by Luddy & Currier, shoes, struck because of a reduction in wages; the firm had anticipated the strike by discharging about one-half the full number of cutters.

*September.* C. L. Ross, baker, sold business to Frank Loud & Co. — Sparks & Murphy established manufacture of heels. — Myron F. Poole established manufacture of shoes. — West Lynn Shoe Co. succeeded by Edward Randall & Co. — Hemingway Bros., machinery, increased space. — Removals to new quarters: Mrs. C. H. King Co., shoes; Benj. Dore & Co., shoes; and A. W. F. Handy, tips. — Southier & Bubler, cut soles, dissolved. — John Callahan, cut soles, retired from business. — Charles O. Beede, retired manufacturer of findings, died, aged 58 years.

*October.* W. C. Stewart established manufacture of special machinery. — Johnson L. Walker, shoes, removed from this place to Newburyport. — Benjamin F. Estes, of Libby & Estes, shoe stains, died, aged 62 years. — Fire damaged the shoe factory of Roberts & Dwinnell. — Thos. T. Callahan, shoes, closed out; no successor.

*November.* I. M. Litch, formerly of Litch & Durland, began manufacture of moulded counters. — S. I. Lowell removed to Eastport, Me., to be known as the Eastport Shoe Co., authorized capital, \$50,000. — Baker & Creighton retired from business, Geo. A. Creighton removing to Danvers to start manufacture of shoes. — Roberts-Dwinnells Co., shoes, incorporated under Maine laws; authorized capital, \$10,000; succeeded Roberts & Dwinnell. — Deaths: Harris R. Campbell, of the J. B. Renton Co., aged 31 years; Eli Wentworth, retired shoe manufacturer, aged 83 years; Willis W. George, cut sole manufacturer, aged 46 years. — Holden Bros. succeeded by M. Holden, Jr. — Factory of Theo. W. McNichol destroyed by fire. — A. W. Neal discontinued; no successor.

*December.* — Joseph E. Knox and L. P. Cederlund, die makers, dissolved; Joseph E. Knox continued. — L. J. Richard & Co. added new machinery. — Morse, Canniffe, & Logan, added machinery and enlarged quarters. — Wm. H. Nourse, cut sole manufacturer, died, aged 50 years. — Whitten, Jones, & Co., succeeded by Benjamin R. Jones. — Among other business changes made during the year were the following: I. M. Atwill shut down for entire year; J. H. Sutherland & Co. consolidated with Millay Last Co. of Haverhill; Kavanagh & O'Keefe incorporated as The Kavanagh Granite Co.; Barnett & White succeeded Barnett & Mellow Last Co.; Skinner & Scott incorporated as Skinner & Scott Wheel Co.; Durland Counter Co. succeeded Durland & Co.; John L. Quereaux succeeded Ellsworth & Quereaux; E. H. Dixey succeeded Lynn Top Lift Co.; and L. M. Pinkham succeeded F. W. Pinkham.

**MALDEN.** In January, Boston Rubber Shoe Co. reduced running time to eight hours on account of dull trade; in April, shut down for three weeks; in June, damaged by explosion. *March.* Mansfield Print Works removed from Mansfield to this place. *April.* Cochrane Manufacturing Co., printing, dyeing, and bleaching, made improvements. *December.* E. D. Burd succeeded to business of Massachusetts Cordage Co., and Tate Wire Cord Co. succeeded to E. D. Burd. — Lorin F. Colby purchased plant of Geo. P. Cox Last Co. and continued under same style.

**Mansfield.** In March, Mansfield Print Works removed to Malden. *July.* Factory of Union Shoe Co. damaged by explosion of boiler. *September.* E. L. Dunbar, wood heels, removed business to Maine. — Burpee Rumsey, shoes, shut down indefinitely. *December.* F. M. & J. L. Cobb succeeded Cobb, Evans, & Cobb. — Central Iron Foundry closed entire year.

**Marblehead.** In February, Brown & Denning, shoes, removed to Beverly. *May.* William E. Brown, shoes, discontinued manufacturing; machinery sold. *August.* Hiram A. Wright, of Wright Bros., shoes, died. *September.* F. H. Stevens & Co., shoes, dissolved; succeeded by Wm. H. Stevens. *November.* Stock, machinery, etc. of E. A. Stevens Shoe Co., sold at auction.

**MARLBOROUGH.** In March, L. E. Clancy established manufacture of shoes. — Strike of ten employes at shoe factory of John A. Frye caused shutdown of plant; in April, striking employes decided to return and work resumed. *May.* S. H. Howe Shoe Co. decided to restore 5 per cent reduction made in wages of employes. *August.* About 75 female employes of Rice & Hutchins, shoes, struck on account of grievance; shutdown of plant in consequence; work resumed with such employes as could be obtained. *September.* Elmer Loring, bicycle shoes, sold business to Bicycle Shoe Co. of Brockton. *November.* A strike was inaugurated in the shoe factories of S. H. Howe Shoe Co., Rice & Hutchins, and John A. Frye, owing to the intention of the manufacturers to conduct their business without reference to or recognition of any labor organization or its agents. (A very full and complete record of the announcements, circulars, etc., issued by manufacturers and employes will be found in the annual report of the State Board of Arbitration for the year ending Dec. 31, 1898, pp. 72-89). Several of the factories opened their doors as free shops and a number of persons were employed, but the main body of employes refused to return. At the close of the year, all of the factories were running in part. *December.* E. P. Longley succeeded to Longley Bros., boxes.

**Maynard.** In May, Assabet Manufacturing Co., woollens, made improvements in plant; in July, filled government orders.

**MEDFORD.** In January, United States Rubber Co. leased the plant of the Medford Manufacturing Co. for the manufacture of boot linings. *May.* Mystic Print & Dye

Works incorporated; capital stock, \$125,000. *October.* Soap factory of John C. Dow & Co. destroyed by fire. *December.* Eagle Heel Co. incorporated; authorized capital, \$150,000.

**Medway.** In February, Hammock Manufacturing Co. moved into new factory. *May.* Charles H. Allen started up new sawmill. *June.* S. G. Clark, boxes, sold to S. A. Greenwood of Bellingham. *July.* Cole, Senior, & Co., woollens, ran nights to fill government orders; in September, shut down two weeks for erection of new dyehouse and other improvements. *September.* Joseph E. Cole of Cole, Senior, & Co., died at Woonsocket, R. I., aged 73 years.

**Mendon.** In August, shoddy mill of George R. Whiting destroyed by fire; work of rebuilding begun; in November, completed; new machinery added and new picker house built.

**Merrimac.** In January, J. B. Judkins & Sons, carriages, shut down temporarily for stock taking. *September.* Arrangements made by George H. Tilton & Co. to start manufacture of shoes; in October, machinery arrived. *November.* John Pease, of S. C. Pease & Son, carriages, died. *December.* Tilton & Lewis, shoes, dissolved; business continued by Mr. Tilton. — Fred A. Loud succeeded to Loud & Batchelder. — Geo. Adams & Co. removed to Reading.

**Methuen.** In February, J. M. Tenney, wool hats, resumed operations after several weeks' shutdown. *March.* Knitted Fabrics Co. increased force; in June, made repairs; in July, resumed operations after temporary shutdown; in August, started up again after shutdown of a few weeks; in December, shut down two weeks for stock taking; ran on part time after resumption of work. — Tremont Worsted Co. added new machinery; in August, shut down for one week; in November, ran three days per week. — Methuen Co., cottons, received government orders and ran nights; in June, completed its order for 500,000 yards of tent and uniform cloth for the government and discontinued night work; in November, ran portion of plant nights. *June.* Lawrence Knitting Co. of Methuen sold to Lawrence Knitting Co. of Lawrence, and business discontinued in this town. *August.* Wm. D. Phinney established manufacture of suspenders. *September.* Swain Manufacturing Co., knit goods, resumed operations after shutdown of several months. *November.* Bakery of Fred S. Clarke, damaged by fire. — Shoddy mill of Henry Klous ran five days per week. *December.* New boiler house completed at J. W. Jowatt's yarn mill. — Brooks Basket Co. removed from Ashburnham to this town; to start up Jan. 1, 1899.

**Middleborough.** In February, Hathaway, Soule, & Harrington, shoes, ran nights in several departments; in September, lasters struck; in October, returned to work. — Leonard & Barrows, shoes, reduced force in cutting department; in September, lasters struck; places filled. *March.* About 30 men employed by C. H. Alden & Co., shoes, struck on account of a reduction in wages; later, settled. *August.* Factory of Schleuter Bros., jewelry cases, damaged by fire. *September.* Clark & Cole, boxes, made improvements at plant. — Lasters employed by Leonard, Shaw, & Dean struck against machines; work continued by hand; in October, returned to machine work. — W. B. Stetson & Co., shoes, retired from business.

**Milford.** In January, Clarence A. Sumner, shoe racks, sold plant to S. A. Eastman; in September, added new boiler. — Clapp, Huckins, & Temple, shoes, reduced capital by withdrawal of special partner; later, reduced wages in stitching room. *February.* Wm. Lapworth & Sons, elastic fabrics, added new machinery. *March.* J. A. Higgins & Co., findings, ran overtime to fill orders. — B. H. Spaulding, straw goods, assigned; in October, succeeded by Carroll, Hixon, & Jones Co. Incorporated; capital stock, \$25,000. *October.* Arrangements made to establish the manufacture of mackintoshes and silk waists, work to begin about January 1, 1899. — Greene Bros., findings, ran on half time; strike of pasters occurred. — Operators on five lasting machines of Milford Shoe Co. struck; places filled. *December.* P. Bartlett & Son purchased the knitting machinery of the Halifax Mills, Lakeport, N. H., and removed it to this town.

**Millbury.** In January, Millbury Cotton Mills made general reduction in wages; in April, shut down indefinitely on account of dull trade; in May, resumed after two weeks' suspension; in June, shut down for two weeks; in July, assigned and shut down for balance of year. — Portsmouth Mill Co., knit goods, shut down for repairs; in July, resumed operations after suspension of several months. *April.* Atlanta Mills leased by Moses Thompson for manufacture of satinetts. — Millbury Edge Tool Works ran nights to fill orders; in May, received government orders; in July, shut down one week

for vacation; in September, shut down for few days to make repairs on engine. *May.* Molt Bros., dyers, ran nights on government orders. — Millbury Wool Scouring Co.'s plant destroyed by fire; in June, began rebuilding; in September, new plant completed and machinery set up. *June.* New dyehouse at Cordis Mill completed and started up. — Edwin Hoyle & Son shut down Ram's Horn Woollen Mill indefinitely; in September, ran spinning department nights; in December, Ram's Horn Mill resumed work. *July.* C. T. Aldrich, woollens, shut down two weeks for repairs; in August, shut down two weeks on account of dull trade. *October.* Plant of C. D. Morse Manufacturing Co., idle since 1886, sold to H. L. Bowden of Boston, who organized a company to be known as the Bowden Felting Mills Co., and equipped the mill with new machinery for the manufacture of felt goods; business to be started up Jan. 1, 1899. *November.* Whitney & Macduff, linen thread, after an extended shutdown, resumed operations with full force on full time. *December.* Foundry of H. T. Merriam started on full time.

**Mills.** In May, J. M. Herman & Co., shoes, received government contract; in August, received second contract and increased force.

**Monson.** In April, S. F. Cushman & Sons, woollens, shut down temporarily for repairs. — R. M. Reynolds, of R. M. & Theodore Reynolds, woollens, died, aged 60 years. *May.* D. W. Ellis & Son, woollens, began erection of addition to plant, 86 x 60 feet, three stories; in June, resumed operations after suspension for improvements; in October, completed building of dyehouse. *September.* Helmann & Lichten, straw goods, let contract for addition to plant, 40 x 50 feet, four stories; in December, completed and occupied. *October.* Cushman's Woollen Mill shut down temporarily owing to accident to machinery; in December ran 40 hours per week.

**Montague.** In January, H. L. Putnam, brick, shut down and works idle all the year. — The Montague Paper Co. and the Turner's Falls Paper Co. absorbed by the International Paper Co. *February.* The John Russell Cutlery Co. reduced force on account of dull trade.

**Natick.** In March, Randall Bros., cotton clothing, added electric motor for running machinery. — Box factory of Oliver Woods destroyed by fire. *May.* Nutt & Pratt, shoes, purchased additional factory for enlargement of plant. *June.* Cloutman, Dunham, & Co., shoes, suspended operations. *July.* C. B. Felch, shoes, purchased business of O. C. Erving & Co. of Wayland, and moved it to this town. *September.* Schneider Bros. & Co., shoes, succeeded John Schneider & Son. *December.* Shoe factory of Johnson, Dale, & Aldrich damaged by fire.

**Needham.** In January, Wye Bros. & Co., knit goods, completed addition to plant. — John F. Brooks & Co., knit goods, installed electric lighting plant in factory; in July, incorporated as the John F. Brooks Co.; capital stock, \$15,000. *November.* W. Carter & Co. began erection of one-story addition.

**NEW BEDFORD.** In January, on account of dull trade the following cotton mills made a reduction in wages: Acushnet, Bristol, Dartmouth, Grinnell, Hathaway, Pierce, Potomaska, Wamsutta, and Whitman; a general strike ensued. All attempts to settle the matter by compromise and arbitration failed, and on April 11 the mills were re-opened, and day by day the operatives returned to work. — Bennett and Columbia Mills sold at auction for \$1,800,000; in February, Bennett Spinning Co. organized with capital stock of \$1,800,000, to operate both mills.

*February.* Property of Lambeth Rope Co. sold to Edward S. Brown; later, company formed with capital stock of \$50,000 and known as Lambeth Rope Corporation. — Wamsutta Mills made improvements in machinery; in April, made repairs to buildings; in November, ran carding and spinning departments full time and weaving department part time; in December, equipped plant with an automatic contrivance to stop the engine in case of accident. — Acushnet Mill Corporation made improvements in machinery; in April, made repairs to buildings; in June, shut down Mill No. 1 on account of bursting of engine fly-wheel; in July, ran nights; in August, made repairs; in October, petitioned for permission to build addition to mill, 64 x 74 feet, one story; in December, completed. — Pairpoint Manufacturing Co., silver-plated ware, shut down indefinitely; in August, capitalists owning plant of Springfield Silver Plate Co., Springfield, Mo., purchased plant with a view to consolidation; in December, works closed. — F. W. Luscomb Machine Co. closed out; no successor.

*March.* Potomaska Mills resumed operations; in December, added new cards. — New Bedford Spinning Co. added four new bollers; in July, reduced wages. — Cut-glass fac-

tory of A. L. Blackmer Co. damaged by fire; later, repaired and business resumed. — Edward H. Jennings began manufacture of Tobey patent roller bicycle chain, a recent invention. — Horatio Hathaway, president Union Cotton & Wool Manufacturing Co. of Fall River, died, aged 67 years.

*April.* Hathaway, Soule, & Harrington, shoes, began erection of new factory building; of wood, 25 x 48 feet, two stories; in September, lasters struck against machines and work resumed by hand. — Dartmouth Manufacturing Co., cottons, began erection of storage shed, 50 x 450 feet. — Grinnell Mills made repairs; in August, added new machinery; in November, ran overtime and fined for so doing; no blame attached to corporation which pleaded guilty to the charge and stated that the overtime work was done under a misapprehension; the corporation was under the impression that so long as the operatives never exceeded 58 hours a week it could work a little longer than usual in order to make up the time lost during the week. — Thomas Bennett, Jr., organizer of Wamsutta Mills, died. — Savory C. Hathaway of Hathaway, Soule, & Harrington, died, aged 60 years.

*May.* Pierce Manufacturing Co. began erection of new building for weaving and storage purposes; in July, added new machinery; in October, put new weave shed in operation. — City Manufacturing Co. reduced wages in spinning department; in August, strike occurred among spinners; later, settled. — Taber-Prang Art Co. began removal to Springfield; in July, completed removal.

*June.* H. W. Morgan and J. A. Sherman established manufacture of casket plates under style of Specialty Manufacturing Co. — Howland Mills reduced wages; in December, equipped plant with automatic device to stop engine in case of accident. — Rotch Spinning Corporation, reduced wages; in November, ran nights; in December, added automatic engine stopping device for use in case of accidents.

*July.* Hathaway Manufacturing Co. ran nights.

*August.* Site purchased for New Bedford Textile School; in October, work of erection begun. — Whitman Mills Corporation voted to reorganize by reducing capital stock from \$1,000,000 to \$50,000 and increasing to \$550,000; in September, 25 weavers struck against reduction in wages; places filled.

*September.* Carriage factory of Geo. L. Brownell damaged by fire.

*October.* Cornell Stocking Co. organized; capital stock, \$29,000; in December, began manufacturing. — New Bedford Cordage Co. ran overtime.

*November.* Considerable damage caused the various mills and factory buildings by severe storm.

*December.* Among the business changes during the year were the following: A. E. Smith succeeded Smith Brothers, glass; Chas. Smith succeeded T. L. Andrews; New Bedford Foundry & Machine Co. succeeded Edward L. Besse doing business as New Bedford Machine Shop; Johnson Type Setter Co. established; S. P. Richmond & Co. dissolved, to be succeeded Jan. 1, 1899, by Richmond & Davol.

*Weavers' fines test case.* The Supreme Court handed down a decision, in November, in favor of the defendant in the case of Jane Gallagher vs. Hathaway Mills. This was the weavers' fines test case which had been pending in the courts for more than a year. In brief, the court decided that the fines law adopted by the New Bedford manufacturers was a legal one. The method is to post notices in the weave rooms stating the prices which shall be paid for first and second quality cloth. If there is a defect in the cloth it is classed as second quality, and a deduction is made from the weaver's wages. It is not called a fine, but it amounts to the same thing. The law says the weaver cannot be fined unless he agrees to the amount which shall be imposed. The court held that if this notice is posted and the weavers see it, and they remain at work, it is an agreement on their part that they will work under these terms. In this case the weaver refused to submit to a reduction from her wages on account of a defect in the cloth which she wove, and left the mill. She brought suit to recover the amount deducted, 50 cents. The case was tried in the District Court and a decision rendered for the plaintiff. The case then went to the Superior Court on an appeal and the decision was reversed. It then went to the Supreme Court which refused to give a decision because certain facts were not stated. It was submitted again to the Superior Court on an agreed statement of facts and again the decision was for the defendant. Thence it was carried to the Supreme Court and the final decision was for the defendant and against the Weavers Association of New Bedford, which had been fighting the case.

*Newbury.* In January, J. O. Rogers, shoes, started up; in March, increased force. *March.* Byfield Woollen Co. made plans for extension to plant; in May, began erection of new building and ran overtime; in August, made plans for improvements; in Septem-



ber, shut down for setting up of new engine and water wheel; in October, put new portion of plant in operation; later, shut down for six weeks.

**NEWBURYPORT.** In January, Bay State Clothing Co. incorporated; capital stock, \$10,000. *February.* Jacob J. Chase & Son began manufacture of cameras. *March.* Newburyport Car Co. made plans for new building 45 x 130 feet, one story, for enlargement of plant. *April.* Edward Perkins Lumber Co. enlarged plant and increased force. — Dodge Bros., shoes, became associated with B. E. Cole & Co. of Boston; changes made in class of product. — Plant of Newburyport Car Co. destroyed by fire; in May, rebuilt; in October, set up new steam-heating plant. — E. F. Tibbetts, shoes, moved to New Hampshire. *June.* Barton & Thurlow, shoes, increased production and capacity by adding story to factory. — Factories of E. P. Dodge Manufacturing Co. and Keith Leather Co. damaged by fire. *September.* W. R. Usher & Son, shoes, incorporated as W. R. Usher & Son Co.; capital stock, \$100,000. *October.* Johnson L. Walker, shoes, removed from Lynn to this place and established manufacturing. — Peabody Mills advertised for sale. *November.* Geo. W. Richardson, of Carr, Brown, & Co., began organization of factory for manufacture of combs. — Erection of new boiler house for the Fiberloid Co. begun, 20 x 80 feet. *December.* Manson & Co. began manufacture of shoes. — Hat factory of C. E. Coffin & Co. shut down indefinitely.

**New Salem.** In August, cardboard factory of Carlyle & Stowell destroyed by fire.

**NEWTON.** In January, Newton Rubber Works made plans for new mill; of wood, 45 x 72 feet, three stories. *February.* Billings, Clapp, & Co. established manufacture of wood alcohol. *March.* Arnold B. Holmes, electrical inventor, died, aged 69 years. *April.* Repairs made at paper mill of Robert Bishop estate; in May, trustees started up mill. *June.* Charles W. King, inventor of shoe machinery, died, aged 61 years. *July.* Moses G. Crane, inventor of original fire-alarm system, died, aged 65 years. — Isaac N. Lothrop, president of Atlantic Works, shipbuilding, died, aged 71 years. *October.* W. S. & F. Cordingley (Silurian Mills) woollens, ran overtime. — R. T. Sullivan, woollens, ran on half capacity. *December.* Wiswall Paper Mills shut down for repairs. — During the year the following business changes were made: H. H. Tilton & Co., fireworks, moved from Revere to this city; J. H. Wentworth, builders' finish, incorporated as J. H. Wentworth Co.; and Wm. Ryle & Co., succeeded Phipps & Train, silk.

**NORTH ADAMS.** In January, Weber Bros., shoes, made plans for erection of new factory, to increase capacity, 40 x 120 feet, four stories. — W. G. Cady & Co., shoes, reduced wages. *March.* Johnson Manufacturing Co., cottons, ran overtime; in April, increased wages of weavers; in May, added 25 woollen looms. — Dunbar Mills, added woollen looms; in April, increased wages of weavers. — Canedy-Clark Shoe Co. began erection of storehouse, 42 x 104 feet; in June, added machinery. *April.* F. J. Barber Manufacturing Co., leather goods, completed new factory; in May, ran full time on government orders; in June, reduced wages in certain departments; employes struck; later, resumed work at reduced rates; in October, employes struck. *May.* North Adams Manufacturing Co., woollens, received government orders; in July, received additional orders. *June.* Arnold Print Works added new machinery; in July, purchased land for enlargement of plant; in December, sales account department removed from New York to this city. — Blackinton Co. put in new cloth washer; in October, several departments started up after three months' shutdown. *July.* Armour & Co. of Chicago began erection of addition to refrigerator plant in this place, 23 x 75 feet, two stories. — S. W. Brayton, retired textile goods manufacturer, died, aged 75 years. *August.* Rogers Leather Goods Co. established manufacture of bags, traveling cases, etc. — Greylock Mills Co. removed machinery from idle plant. *September.* Gallup & Houghton made arrangements for increasing capacity of power plant at Eclipse and Beaver mills. *October.* Windsor Co., prints, made improvements at plant. — A. F. Phillips established manufacture of a specialty in brushes (his own invention) in this place. *November.* Arrangements completed between the James Hunter Machine Co. and William White of Nashua, N. H., whereby the former would manufacture all of the machinery formerly manufactured by the Wm. White Textile Machine Co.; the Hunter Machine Co. leased the idle plant of the old Zylonite Co. at Adams for an extension of business. — R. E. Schouler, late superintendent of the Blackinton Mills, secured building to manufacture fancy worsteds, to be in full operation by Jan. 1, 1899. *December.* The beaming room of Plunkett & Sons mill shut down for three days; added new steel water flume and wheels. — The H. T. Cady shoe factory, idle for over a year, leased by W. W. Anthony for manufacture of leather goods.

**NORTHAMPTON.** In January, McCallum Hosiery Co. formed to conduct business formerly carried on by Belding Bros. & Co.; incorporated in February; in March, increased running time; in August, purchased business of Constable Hosiery Co., Holyoke, and made arrangements for its removal to this city; in October, made plans for erection of new mill, 50 x 135 feet. *July.* Northampton Cycle Co. shut down indefinitely. *August.* Connecticut River Manufacturing Co. changed style to Connecticut Valley Lumber Co.

**North Andover.** In January, Brightwood Manufacturing Co. set up new looms and increased wages in several departments; in April, shut down for a few days; in November, ran on part time and added new machinery. *April.* North Andover Mills shut down for a few days; in June, shut down for two weeks. — M. T. Stevens & Sons shut down for a few days; in August, curtailed production; in October, erected new store shed, 24 x 26 feet. *November.* Sutton Mills ran on part time and added new machinery; in December, No. 4 mill partially destroyed by fire.

**North Attleborough.** In March, W. F. Herring & Co., new firm, established manufacture of a patent oil can, a recent invention. — Factories of H. H. Curtis & Co., E. C. Connell, J. B. Mantien & Son, and T. I. Smith & Co., jewelry, destroyed by fire. *April.* Business of August Schilling & Co. sold at auction. *May.* Erection of jewelry factory for E. I. Richard's estate begun; 65 x 130 feet, three stories; to replace plant destroyed by fire. — Thomas Totten withdrew from Totten-Sommer Co., jewelry manufacturers, and business closed out. *June.* Erection of new jewelry factory for G. K. Webster begun; of wood, 60 x 200 feet, two stories, with wings 34 x 60 and 20 x 35 feet; in September, completed and occupied. — The Snap & Tool Co. added new engine lathe to equipment of plant. *July.* V. H. Blackinton & Co., jewelry, ran nights. — E. A. Briggs & Co. succeeded E. S. Cargill, meal and feed. *August.* Standard Jewelry Co., new firm, established manufacture. — Work begun on new factory of T. I. Smith & Co. *October.* Young & Bagnell, new firm, established manufacture of jewelry and silver novelties. *December.* Among the business changes of the year were the following: Mason, Howard, & Co. succeeded Fred. Mason, jewelry; Fall Manufacturing Co. succeeded Mason Jewelry Co.; and J. L. Crandall & Co. moved to Rhode Island.

**Northborough.** In May, Northborough Woollen Mills (E. W. Chapin & Co.) shut down indefinitely; in June, resumed operations to run out stock; in July, leased by L. Bachmann, of New York, and operations resumed. *October.* Woodside Woollen Mills ran at half capacity; in December, shut down for a week on account of broken shafting.

**Northbridge.** In January, Paul Whitin Manufacturing Co., cottons, made a general reduction in wages; in March, added humidifiers; in April, made improvements in office building. *May.* Whitin Machine Works completed new casting shop; in June, produced new carding machine; in September, resumed full time after short schedule for two years; received order for looms and spinning frames from Russia. *July.* Whitinsville Cotton Mills suspended operations for one week on account of dull trade. *September.* Riverdale Woollen Co. erected new storehouse, 50 x 200 feet, and set up new machinery.

**North Brookfield.** In January, strike occurred on account of reduction in wages at shoe factory of E. & A. H. Batcheller; settled by compromise; in March, reduced force; in June, reduced force and wages; in August, reduced to 40-hours time; in December, shut down one week. *September.* H. H. Brown & Co., shoes, reduced force; in December, made reduction in stitching room.

**Northfield.** In October, Green & Severance dissolved; N. Dwight Alexander succeeded.

**Norton.** In January, Norton Mills Co. established a wool-scouring plant. *March.* J. T. Morse Wool Cleansing Co., new firm, completed plant.

**Norwood.** In May, Winslow Bros., leather, began erection of new tannery, 52 x 200 feet, five stories. — The Norwood Press, composed of the firms of J. S. Cushing & Co., Berwick & Smith, G. P. Scott & Sons, and E. Fleming & Co., publishers, reduced length of working day. *July.* Norwood Cotton Manufacturing Co. made plans for erection of plant, 78 x 287 feet, with ell, 39 x 82 feet. *October.* Bell & Casey, machinists, who went into insolvency in August, 1897, succeeded by E. W. Dowd. — H. M. Plimpton & Co. removed from Boston to this town.

**Oakham.** J. A. Pierce moved grist mill business from Amherst to this place.

**Orange.** In January, National Box & Lumber Co. organized and incorporated, and succeeded to National Keg and Box Co. *March.* Mann & Sprague, clothing, made arrangements for manufacture of new line of goods. *June.* Plant of Orange Furniture Co. destroyed by fire; company dissolved; no successor. — New Home Sewing Machine Co. made repairs.

**Oxford.** In early part of year Comins & Co., woollens, removed from Leicester to this town; in July, started up after a shutdown of one week. *April.* A. L. Joslin & Co., shoes, started up on new run. *July.* Idle woollen mill of Chase Woollen Co. purchased and operated by Geo. C. Moore of Chelmsford; in October, shut down indefinitely. *September.* Edwin Bartlett made improvements in fire protective service. *November.* Michael Degnan, proprietor Oxford Dye Works, introduced finishing machinery for finishing product of other concerns. *December.* Thayer Woollen Co. ran on half time. — David N. Taft succeeded Taft & Taft, woollens.

**Palmer.** In January, Palmer Carpet Manufacturing Co. resumed operations after partial shutdown; in May, reduced wages in weaving department; in August, shut down for four weeks. *February.* O. J. Powers & Son took possession of straw factory of Rogers Hat Co. — Holden & Fuller's Woollen Mill shut down indefinitely; in May, ran overtime. *March.* Plant of Central Massachusetts Electric Co. destroyed by fire; in April, work of rebuilding begun; in July, began furnishing power. *May.* Thorndike Manufacturing Co. made improvements in machinery; in June, began erection of addition to dyehouse of mill No. 2; in September, dyehouse completed and new engine installed; in November, purchased mills and property of Warren Cotton Mills at West Warren. *October.* Boston Duck Co. built new machine shop. — Palmer Wire Manufacturing Co. ran nights temporarily on account of breakdown at Worcester; in December, shut down while waiting for materials. — Palmer Mill of Otis Co. damaged by fire. *December.* Palmer Foundry and Machine Co. succeeded Palmer Iron Foundry Co.

**Peabody.** In January, Vaughn Machine Co. purchased additional machinery and land for erection of new storehouse; in June, began erection of new building, of brick and wood, 50 x 200 feet, three stories. — Geo. J. Winchester of Geo. J. Winchester & Co., morocco, died; business closed out by Frank Winchester who had run the plant in conjunction with his own since August; in November, tannery of Frank Winchester damaged by fire. *February.* Plant of Poor & Littlefield destroyed by fire; new quarters leased and manufacturing resumed. *March.* Lionhide Waterproof Leather Co. established manufacture of patent sheepskin leather. — Arthur D. Osgood, shoe findings, died, aged 37 years; in September factory rented by Boston White Alum & Leather Co. — Warren Shaw of Warren Shaw & Co., shoes, died, aged 50 years; business continued by two firms, F. W. Lord & Co. and Fred. M. Shaw & Co. *June.* A. C. Lawrence & Co. began erection of addition, 40 x 100 feet, five stories; in September, completed. — Geo. R. Nelson succeeded R. G. Nelson & Son. — Levisseur Bros. & Co. moved into new quarters; in August, factory damaged by fire. *July.* Stephen Blaney leased factory for manufacture of morocco. *August.* A. B. Clark removed from Danvers to this town. *September.* P. Lennox & Co., morocco, increased force. — Joseph Osborn of J. E. Osborn & Co., tanners, died, aged 56 years; business of firm closed out; no successor. *October.* Luther Larrabee began erection of shoe factory. — Lumber mill of Aaron T. Clark destroyed by fire. — Challenge Incubator Co., C. W. Paige proprietor, succeeded Wood & Paige. *November.* J. B. Thomas, morocco, died, aged 71 years; in December, business incorporated as J. B. Thomas Co. *December.* C. P. Bancroft, curriers' grease, succeeded Geo. W. Bancroft & Co. — F. P. Osborn, cut stock, succeeded F. P. Osborn & Co. — J. F. Ingraham & Co. succeeded Frank Locke & Co., leather.

**Pepperell.** In March, shoe factory of Gregory, Shaw, & Co. started up on full time; in May, increased force. *June.* H. A. Parker & Co., paper, shut down for balance of year. *July.* Horace G. Hartwell, retired paper manufacturer, died, aged 82 years. *December.* Champion Card & Paper Co. began running with night force.

**PITTSFIELD.** In January, Teeling Baking Co. sold plant to American Biscuit Co. — Pontoonuc Woollen Manufacturing Co. received new machinery from England; in April, shut down for few days on account of dull trade; in May, reduced force and ran on three-days time; later, received government orders and started up in full; in June, ran portion of plant nights; in July, received additional government orders; in Decem-

ber, added new napping machine. — Wm. E. Tillotson, woollens, added new looms; in June, built new smoke stack; in July, ran on five-days time; in August, new boiler house erected and repairs made; in September, resumed after shutdown of two weeks; in December, ran on full time. — Wilson & Horton (Taconic Mills), woollens, shut down to make improvements in plant; in March, ran nights; in May, assigned and shut down; later, started up to run out stock; in July, shut down spinning and carding departments permanently; in October, shut down balance of mills permanently. — E. D. Jones Sons & Co., iron founders, shut down for repairs on boiler; in September, ran nights; in November, ran nights.

*February.* Sisson & Robinson, paper boxes, added new machinery. — Berkshire Brewing Co. began erection of addition, brick, 40 x 90 feet, three stories.

*March.* Gale Lumber Co. incorporated; capital stock, \$30,000. — Tanner, Hamilton, & Co. awarded contract for new grist mill and elevator.

*April.* Marcus T. Moore, added brass foundry to plant; in July, succeeded by F. W. Hubbell under style of Moore Foundry Works. — Russell Manufacturing Co., woollens, reduced running time to four days per week; in June, increased running time; in August, reduced to three days per week and later shut down for six weeks; in October, resumed operations; new engine added and other improvements made. — O. W. Robbins Shoe Co. reduced wages; in May, shut down for stock taking; in November, shut down one month for stock taking and repairs; in December, lasters struck against reduction in wages; settled.

*May.* Burghardt & Burgess Foundry Co. organized and started up. — Peck Manufacturing Co. reduced force and ran on three-days time; in June, shut down one week for vacation; in December, shut down spinning department in upper mill; later, resumed. — Hurlburt Stationery Co. shut down ten days for repairs.

*June.* D. M. Collins & Co., knit goods, reduced to half time; in August, continued half time; in November, began on full time.

*July.* Stanley Instrument Co. removed plant to Great Barrington.

*August.* Frank W. Hadley began operating in new shirt factory.

*September.* Stanley Electrical Manufacturing Co. ran nights. — Cheshire Shoe Manufacturing Co. reduced force.

*October.* Lower mill of Pomeroy Woollen Co. leased for three years to Helliwell & Co. of Leeds, England, to manufacture cotton warps, blankets, etc., and preparations made to begin operations in January, 1899.

*November.* Pittsfield Gas Co. put new gas plant in operation.

**Plymouth.** In February, Plymouth Woollen Co. began manufacture of new line of goods for use in Arctic regions; in March, ran overtime; in September, ran overtime.

*March.* Plymouth Cordage Co. established industrial school for girls employed in its factory; in August, received government order. *April.* Lewis G. Bradford, founder

of Bradford Joint Co. and inventor of Bradford bed-joint, died, aged 87 years. *November.* Standish Woollen Mills ran on full time; addition used as sewing-room completed, and new boiler set up. *December.* The Robinson Iron Co. was shut down entire year.

— Old Colony Rubber Co. purchased idle Russell Mills; later, changed name to Colonial Rubber Co.; made repairs and installed machinery preparatory to starting up in May, 1899.

**Plympton.** Mill of Jenkins Manufacturing Co. closed entire year and announced for sale.

**Provincetown.** In November, gale destroyed the sail loft of F. A. Paine; no business done during the year.

**QUINCY.** In January, Murray Bros. succeeded T. P. Owens & Son, monuments, etc. *March.* Bay State Aluminum Co. resumed operations after protracted shutdown. *July.* Quincy Shoe Co. suspended operations; in November, factory offered for sale. *September.* McDonnell & Cook dissolved; business continued by Thos. McDonnell. *December.* Eagle Polishing Mills damaged by fire. — M. Monahan succeeded Monahan & Breen, cut stone. — John S. McNell succeeded O'Brien & McNell, cut stone. — S. Henry Barnicoat, cut stone, reorganized as Columbia Granite Co.

**Randolph.** In January, Hagerty & Sullivan, shoes, increased output; in May, shut down for repairs; in June, resumed operations; in September, lasters struck; later, agreement made and work resumed. *February.* Tileston Bros. & Co., shoes, Boston, purchased land; in April, began erection of factory, wood, 35 x 100 feet, four stories. *July.* Howard, French, & Co., shoes, dissolved; no successor. *August.* Nelson Paper

**Box Co. of Brockton** leased quarters for establishment of branch factory at this place. *September.* Lasters struck in all the shoe factories through sympathy with fellow workmen in Brockton. The settlement of the strike in Brockton closed the trouble in this town.

**Raynham.** In August, Diamond Tack & Nail Works began erection of addition to cutting room.

**Reading.** In July, Hay & Chase, shoes, dissolved; business continued by Hamilton Hay. *December.* Geo. Adams & Co. moved from Merrimac to this town.

**Rehoboth.** In February, old cotton mill, unoccupied for many years, torn down.

**Revere.** In October, Winnissimmet Gas Co. incorporated; capital stock, \$50,000. *December.* H. H. Tilton & Co., fire works, moved to Newton.

**Richmond.** In April, Richmond Iron Works started up on government orders.

**Rockland.** In January, Rockland Co., shoes, ran overtime. — Lane & Gallagher, shoes, dissolved; business continued in April by C. E. Lane. *February.* George W. Hall purchased factory to establish manufacture of shoes; began operations in May. — John Burdett, heels, added machinery and increased force. *April.* Shoe-string factory of M. A. Murphy & Co. destroyed by fire. *September.* Machine lasters at following factories struck: J. S. Turner Shoe Co., Rice & Hutchins, French, Shriner, & Urner, J. H. Locke & Son, and C. E. Lane; work resumed by hand. *October.* Rice & Hutchins awarded contract for addition to factory, 50 x 100 feet, four stories; hand lasters at Rice & Hutchins struck; work resumed by hand; later, 16 members of Lasters' Union returned to work and with 12 non-union lasters work was continued, one-third of the machines being in operation. *November.* Rockland Shoe Co. closed its factory and steps taken for purpose of closing up its affairs. *December.* Ridge Hill Boot & Shoe Co. incorporated under Maine laws; authorized capital, \$150,000.

**Rockport.** In June, about 90 stone cutters in employ of Rockport Granite Co. struck for increase in wages.

**Rowley.** In January, J. F. Bradstreet established manufacture of heels. — S. A. Boynton, heels, leased J. W. Brown factory and moved business to that location. *March.* Thomas W. Burke of Burke Heel Co. died, aged 35 years. *April.* Burke Heel Co. increased force; in July, corporation dissolved, Frank L. Burke succeeding. *May.* James M. Perley established manufacture of shoes. *October.* Wm. C. Foster's Sons, shoes, installed new machinery. — Mooney & Richardson, heels, ran portion of plant evenings.

**Royalston.** In May, Geo. Whitney Woollen Co. shut down for two months; in December, shut down for one month.

**Rutland.** In October, Moulton Bros. put machinery into new satinet mill. *December.* Rutland Woollen Co. was not in operation during the entire year.

**SALEM.** In January, Naumkeag Steam Cotton Co. reduced wages; in May, received government orders; in July, added machinery; in August, shut down for repairs; new machinery added and work resumed. — L. G. Straw & Co., shoes, reduced wages in two departments. — Michael Shortell of M. Shortell & Son, shoes, died, aged 74 years. — Shavers at tannery of Alphonse Mouthey struck because of grievance.

*February.* J. H. Ellis & Co. established manufacture of leather belting. — P. Creedon & Co., heels, added machinery; in November, added more machinery. — Fowle & Daley, shoes, dissolved; succeeded by Cass & Daley; in March, added two lasting machines; in September, ran overtime. — C. S. Fuller & Co., shoes, changed from women's to men's shoes.

*March.* P. A. Field & Co., shoes, ran overtime; in July, reduced wages. — Factory of James Brogan, cut stock, destroyed by fire. — Abner C. Goodell, inventor of first printing press that printed both sides of the paper in one operation, and several other machines, died, aged 38 years.

*April.* Thos. F. Hayes, established manufacture of shoes. — West India Fibre Co. ran overtime. — Michael Looney, tanner, erected addition to currying shop. — Boston & Maine R.R. increased working time at repair shops to ten hours.

*June.* Zenas Sears & Co., leather, sold to Morrill Leather Co.; in August, new firm began erection of addition to plant, 40 x 70 feet, six stories; in October, addition completed.

**August.** Jenney Manufacturing Co. established to manufacture proprietary medicines. — J. J. Connolly, shoes, began manufacture of specialty and increased output. — Thos. F. Weston, tanner and inventor of leather machinery, died, aged 66 years.

**September.** Paul B. Patten, machinery, perfected machinery for removing burrs from wool or cotton without injury to the fiber and shipped goods to Russia. — Estate of Richard Quirk, shoes, closed out.

**October.** Lumber mill of Aaron T. Clark destroyed by fire. — Factory of New England Overall Co. damaged by fire. — Joseph A. Dalton, tanner, died, aged 82 years.

**December.** M. Esbach began manufacture of heels. — Ward & Hayes began manufacture of misses' and children's shoes. — Treadwell Bros. & Clark, leather, shut down indefinitely preparatory to closing out business. — Patrick D. Eagan, leather, shut down entire year. — Salem Chemical & Supply Co. succeeded Salem & South Danvers Oil Co.

**Salisbury.** In August, Walker & Sperry and Arthur A. H. Whelpley discontinued contract work for Hume Carriage Co. and dissolved.

**Sandwich.** In October, Charles W. Lapham, retired glass manufacturer, died, aged 89 years.

**Saugus.** In April, hair mill of estate of E. F. Kent shut down; in November, leased to Bryant & Kent. **December.** Establishment of Frederick Stocker, brick, was not operated during 1898.

**Sharon.** In February, H. A. Blackstone, boxes, sold out to C. F. Smith.

**Shelburne.** In January, Lamson & Goodnow Manufacturing Co., cutlery, shut down temporarily for repairs; in December, shut down for stock taking. **July.** J. R. Foster closed peg factory and began removal to New Hampshire. **December.** Stock in a new metallic casket company subscribed by townspeople. — R. H. Austin succeeded Samuel Elmer, silk.

**Shirley.** In March, reduction in wages occurred at Samson Cordage Works. **May.** F. D. Weeks Extracting Co., woollens, shut down on account of dull trade.

**Somerset.** Brick works of Arnold B. Sanford idle entire year.

**SOMERVILLE.** In April, factory of Kimball & Sons, boxes, damaged by fire; in May, second fire destroyed the buildings. **September.** Jesse W. Merrill succeeded Lewis E. Merrill, baker. **December.** Hawkes Manufacturing Co. succeeded H. C. Folger Co. — Nickerson & Bond of Boston succeeded A. M. Nickerson doing business as Hub Wire Screen & Shade Co. — W. A. Sanborn, brick, closed during entire year; business given up. — Amos Haynes & Co., vinegar and pickles, did no manufacturing in this State during the year; all goods made in their mills outside the State.

**Southborough.** In August, Cordaville Woollen Co. started up in full.

**Southbridge.** In January, Blanchard Optical Co., new firm, set up machinery and began operations. — American Optical Co. shut down for stock taking; in October, ran overtime. **April.** Hamilton Woollen Co. operated mills on summer time schedule. — Benajah U. Bugbee, president of Southbridge Optical Co., died, aged 53 years. **July.** Stephen Richard began erection of knife factory, 25 x 50 feet. **September.** Litchfield Shuttle Co. began erection of addition 28 x 32 feet, three stories.

**South Hadley.** In June, B. F. Perkins & Son, paper, built addition. **July.** Hampshire Paper Co. made repairs. **August.** Lynch Bros., brick, completed season's work. **November.** Pearl City Paper Mill sold to B. F. Stevens & Son of Holyoke.

**Spencer.** In January, "Upper Mill" of Spencer Woollen Co. leased by Newton Darling and started up with portion of machinery in operation; in March, ran full and took government contract; in May, "Upper Mill" shut down for repairs and changes in machinery; in June, resumed operations; later, mill sold to Allen L. Taft of Oxford, who shut down for repairs; in August, added machinery and ran full; in October, built addition to weave room. **February.** Nipmuc Paper Box Co. increased force and ran overtime. — Dufton Bros., woollens, reduced wages at Westville Mill; in September, made improvements and added machinery. — John E. Bacon of J. E. Bacon & Co., shoes, died, aged 60 years. **May.** Massasoit Knitting Co. added new machinery. — Bacon & Sibley, shoes, suspended operations to adjust affairs; in June, started up; in November,

shut down for stock taking. — Beebe, Webber, & Co. of Holyoke, opened Valley Mill on full time to aid in execution of government contract for 5,000 yards of army cloth a week; about one-third of looms run; finishing done at Holyoke; later, reduced time in all departments; in November, shut down mill permanently. — G. P. Prouty, shoe manufacturer, died, aged 68 years. *September.* Isaac Prouty & Co., shoes, reduced wages; peggers, heel trimmers, and lasters struck; in October, peggers received restoration of wages and resumed work, and heel trimmers resumed at reduced rate. *October.* Several departments of Spencer Wire Co. ran day and night. *December.* Prouty Bros., shoes, closed down and sold machinery during the year.

**SPRINGFIELD.** In January, Agawam Manufacturing Co. changed style to Alaska Knitting Co.; shut down entire year. — Smith & Wesson, revolvers, granted employees half holiday on Saturdays; in February, reduced force; in April, ran overtime.

*February.* J. H. Burt Manufacturing Co., adjustable bicycle handle bars, removed from Boston to this city.

*March.* United States Armory increased force and ran nights; in May, increased force; in June, adopted 20-hours time; force divided into two shifts of 10 hours each; in November, portion of plant shut down on account of accident to machinery. — Lathers struck for increase in wages; settled in favor of workmen.

*April.* Duryea Motor Vehicle Co. incorporated under New Jersey laws; authorized capital, \$1,500,000. — Springfield Drop Forging Co. began erection of new building of brick, 45 x 207 feet, two stories; in August, factory completed and machinery set up; in September, set up electric power and lighting plant; started with night force. — Homer Foote, formerly proprietor Springfield Car Works, died, aged 88 years.

*May.* Golden Spring Hook & Eye Co. incorporated; capital stock, \$15,000; in June, began operations. — Taber-Prang Art Co. began removal from New Bedford to this city; in July, completed removal. — Building occupied by O. W. Bullock & Co., tools; Tucker & Cook Manufacturing Co., yarns; Brooks Bank Note Co., and other manufacturing firms destroyed by fire. — Cashin Card & Glazed Paper Co.'s factory destroyed by fire; no business done during balance of the year; in November, leased idle plant of Ames Manufacturing Co. at Chicopee. — Chas. J. Goodwin, president Chapman Valve Co., died.

*July.* Factory of National Photograph & Chemical Co. destroyed by explosion and fire.

*August.* E. Stebbins Manufacturing Co., metallic goods, completed new building. — Indian Orchard Co., cottons, ran overtime. — Holyoke Card & Paper Co. shut down for one week.

*October.* Lee Woollen Co. (Orville F. Jermain) leased quarters in this city and established manufacture of woollen goods. — George N. Phillips, inventor of machinery used in manufacture of matches, died, aged 79 years.

*November.* John S. Steere, manufacturer church organs, died, aged 51 years.

*December.* David A. Reed retired from Industrial Cycle Co.; business continued under same name by remaining partners. — Elektron Co. received contract for placing an electric elevator in new Albany, N. Y., hospital. — Hodges Fibre Carpet Co. shut down one week for stock taking. — During the year the following business changes were made: Iroquois Manufacturing Co. succeeded Iroquois Bag and Oil Co.; Goldsmith & Taft succeeded E. C. Goldsmith; Horace P. Wright succeeded estate of W. H. Wright; United States Envelope Co. absorbed the Springfield Envelope Co., Morgan Envelope Co., and P. P. Kellogg & Co.

**Stockbridge.** In March, Charles E. Callender, paper, made plans for enlargement of plant.

**Stonham.** In January, T. H. Jones, shoes, shut down indefinitely. *May.* Manufacturing department of Union Road Machinery Co. transferred to W. F. Wheeler. *June.* The "John Hill" shoe factory leased for the manufacture of army shoes. *July.* Lyman Dike, retired shoe manufacturer, died, aged 77 years. *October.* Marcellus Hemenway, harnesses, sold out; no successor.

**Stoughton.** In March, D. C. Marr, president of Stoughton Rubber Co., died, aged 87 years. *July.* Plant of Marion Manufacturing Co., rubber clothing, destroyed by fire; to be rebuilt. *September.* Lasters at factories of J. & H. Fitzpatrick and Upham Bros. & Co. struck against machines; arrangements made for resuming work by hand. *October.* Foss & Co., wool dealers, Boston, erected shoddy mill in this place. — Norfolk Rubber Co. moved from Stoughton to Boston.

**Starbridge.** In January, Fiskdale Mills, cottons, made general reduction in wages; in October, made improvements in plant; in December, added boiler and new machines in cloth room.

**Sutton.** In February, woollen mill owned by C. T. Aldrich, Jr. destroyed by fire; to be rebuilt. *July.* Sutton Manufacturing Co., cottons, removed machinery of Wilkinsonville mill to Webster; this plant had been shut down for a year. *August.* D. T. Dudley Shuttle Co. reduced to half time; in October, resumed full time; in December, added new machinery. *September.* Manchaug Mills, cottons, began erection of addition to No. 2 mill.

**Swampscott.** In November, fire damaged last factory of C. O. W. McNichol and shoe factory of John R. Merrill.

**TAUNTON.** In January, Field Tack Co. organized and arrangements made for putting plant in operation. — Taunton Iron Works resumed operations after temporary shutdown; in August, shut down temporarily. — Weir Stove Co., resumed operations after brief shutdown; in March, shut down indefinitely; in May, resumed operations for several days. — Corr Manufacturing Co., cottons, reduced wages; weavers struck; compromised and operations resumed; in June, doffers struck for advance, spinners struck through sympathy; all returned at old rate after week's idleness; in July, increased capital stock \$100,000; in November, added new machinery. — Eagle Mills, cottons, shut down indefinitely. — Geo. M. Woodward, president Taunton Copper Co., died, aged 76 years.

*February.* Mason Machine Works produced a new magazine loom and new combing machine; in March, reduced running time; in July, resumed 10-hours time. — Whittenton Manufacturing Co., cottons, reduced wages; weavers and loom fixers struck and plant shut down; in March, work resumed at reduced rates.

*March.* Taunton Oil Cloth Co. started up plant after a protracted shutdown; arrangements made to manufacture additional line of goods; in May, suspended operations for several days. — Atlas Tack Corporation ran portion of plant nights; in August, started up new power plant; in September, Field shop ran nights; in October, shut down Field shop on account of accident; improvements made in power service. — Plant of Anthony & Cushman Tack Co. damaged by fire. — Empire Ring Traveler Co. incorporated; capital stock, \$5,000.

*July.* Linder & Ward Co. incorporated to manufacture bit-stock drills; capital stock, \$5,400. — Elizabeth Poole Mills began erection of addition, 78 x 100 feet; in August, addition completed; in November, added new machinery.

*October.* Cohannet Mills, cottons, started up 24 new cards; in November, shut down owing to break in shafting; later, added new machinery.

*December.* The following firms were not in operation during the year: Philip E. Williams & Co., brick; Standard Oil Cloth Co.; and Taunton Manufacturing Co., lacing studs.

**Templeton.** In January, D. L. Thompson absorbed by Allen-Thompson-Whitney Co. — Carpet mill of H. M. Small resumed after suspension. — River mills leased by F. J. Church; old dyehouse demolished preparatory to erection of new one. *December.* Winchester Box Manufacturing Co. joined combination known as New England Box Co. — New steel-wheel factory dedicated; citizens of the four villages of the town contributed \$15,000 in cash and the town abated taxes for next ten years.

**Tewksbury.** In January, plant of Taylor & Barker, chemicals, destroyed by fire.

**Townsend.** In May, Spaulding Bros. Co., leather-board, set up additional machinery; in September, set up new wheel. *August.* E. A. Prime established manufacture of egg cases.

**Upton.** In February, Nelson & Ladow, straw goods, increased output; in November, added new machinery and started on full time. *June.* Sawmill and woodworking factory of William G. Fiske destroyed by fire; erection of new plant begun, 45 x 100 feet, one story; completed in August and machinery set up. — Upton Manufacturing Co., boxes, set up new water wheel and let contract for addition, 30 x 40 feet.

**Uxbridge.** In January, Richard Sayles & Co. advanced wages; in October, shut down; in December, resumed. — Calumet Woollen Co. increased wages; in June, reduced to five-days time on account of dull trade; in August, shut down for repairs; in October, shut down Calumet Mill and ran Hecla Mill on short time; in December, resumed on full time. *June.* Happy Hollow Mill sold to James B. McCann of Spencer, who made repairs and built an addition. *July.* Uxbridge Cotton Mills shut down for



two weeks because of dull trade. *September.* Capron Woollen Mill, under lease to Royal Taft, shut down indefinitely.

**Wakefield.** In March, Smith & Anthony Co., stoves, resumed operations.

**Walpole.** In March, F. W. Bird & Son, paper, made plans for erection of addition to plant, 65 x 190 feet, two stories.

**WALTHAM.** In January, American Waltham Watch Co. shut down for stock taking; in February, resumed; in April, suspended operations for a few days; in June, shut down three weeks for annual vacation; in July, resumed; in October, gas plant damaged by explosion; in December, shut down partially during holidays. — Hill-Whitney Aluminum Co. completed removal from Vermont; in February, incorporated as Hill, Whitney, & Wood Co.; capital stock, \$50,000. *February.* Boston Manufacturing Co. reduced wages; in October, completed addition, 80 x 60 feet, three stories, for manufacture of silk and satin goods. *April.* Columbia Watch Factory shut down for repairs and improvements. *May.* James A. Needham, retired manufacturer of absorbent cotton, died, aged 55 years. *July.* Davis & Farnum Manufacturing Co. began manufacture of window weights by machine. *August.* Waltham Electric Clock Co. made improvements in plant and product. — J. L. Thompson Manufacturing Co., buckles, shut down for repairs. *December.* Waltham Organ Co. shipped church organs to Sandy Beach, Conn., and Slatersville, R. I.

**Ware.** In January, Otis Co., cottons and knit goods, ran overtime in several departments; in November, began erection of addition to underwear finishing department. *February.* Weavers on Jacquard looms at plant of George H. Gilbert Manufacturing Co., woollens, struck for increase in pay; advance granted and operations resumed; in March, card and spinning rooms shut down for two weeks because of over-production; in June, reduced carding and spinning departments to three days, other departments to four days per week; later, resumed full time; in August, reduced to half time; decided to close carding and spinning rooms in this place permanently; in September, about 30 weavers struck because of grievance; settled. *July.* Chas. A. Stevens & Co., woollens, shut down on account of dull trade; first time mill has been shut down since 1894; in September, resumed operations after shutdown of several weeks.

**Wareham.** In January, Geo. F. Blake's iron mill closed permanently.

**Warren.** In January, A. L. Sayles of Sayles & Jenks, woollens, died in Rhode Island; in March, style changed to Sayles & Jenks Manufacturing Co. and incorporated; in September, shut down one week for repairs; in November, shut down for one week. *March.* Torkelson Manufacturing Co. organized to manufacture fire arms; plans made for erection of factory 40 x 120 feet, three stories; in July, contract awarded and work begun. *June.* Moses K. Whipple, cotton warp manufacturer, died; four years ago his mill was sold to Sayles & Jenks and now occupied by Bradford Yarn Co. *November.* Warren Cotton Mills purchased by Thorndike Co. of Palmer, and repairs made; the mills had been closed for two years previously; one room opened for work on the 14th; new dyehouse constructed. — Warren Pump Co. ran nights.

**Watertown.** In January, Simons, Hatch, & Whitten, shirts, incorporated as Simons, Hatch, & Whitten Co. *March.* United States Arsenal ran nights; in April and May, increased force and continued night work. *April.* Thomas Dalby, retired knit goods manufacturer, died in Chicago, aged 75 years. *August.* Hood Rubber Co. increased capital stock by \$50,000. *October.* "Old grist mill" operated under proprietorship of George W. Pope, shut down permanently. This mill was operated by water power and had been in continuous activity for more than 260 years. *November.* Finishing room, Aetna Mills, ran nights to keep up with other departments. *December.* During the year, Chester C. Collins succeeded A. Tomlin Son & Co., knit goods, and the Government Waterproof Paint Co. changed style to The Waterproof Paint Co.

**Wayland.** In January, Williams Shoe Co. established manufacture of shoes. — North Natick Shoe Co. incorporated to manufacture shoes; capital stock, \$10,000. *March.* Charles F. Chessman established manufacture of shoes. *April.* N. C. Griffin, shoes, built addition, 50 x 60 feet. *May.* Middlesex Shoe Co. and F. A. Howe closed up business.

**Webster.** In March, bakery of F. R. Childs & Co. destroyed by fire; firm dissolved; later, business continued as The Webster Baking Co. — Webster Job Dye Works sold to E. S. Stevens of Quinnebaug, Conn., to be used as a dyehouse for his mill. — Lasters

employed at shoe factory of A. J. Bates & Co. struck because of reduction in wages; in April, State Board of Arbitration decided that there ought to be no reduction; decision accepted by both parties and work resumed. *May.* H. N. Slater, cottons, shut down for improvements; in August, cambric works shut down for repairs. — Slater Woollen Co. shut down for repairs; later, resumed and ran overtime on government orders; in October, shut down to put in new flume; later, started up. *November.* Bay State Box Co. began addition to factory.

**Wendell.** In August, Orange Knitting Co. started up after shutdown of several weeks. — During the year, Farley Paper Co. made improvements in its paper mill.

**Wellesley.** Daniel Shea, glue, closed factory during entire year; property taken by Park Commissioners. — Charles River Paper Co. succeeded Wellesley Paper Mills.

**Westborough.** In January, Westborough Underwear Co. and T. W. Hines & Co., straw goods, increased force. — George B. Brigham & Sons, shoes, resumed with reduced price list after temporary suspension; in October, reduced force. — Hunt Manufacturing Co., bicycle saddles, reduced wages in lacing department; strike followed; in February, discontinued night work. *April.* Humber & Co., bicycles, reduced force; in October, shut down on account of lack of orders. *May.* Gould & Walker, shoes, ran on summer time schedule. *June.* Ariston Manufacturing Co. assigned; succeeded by J. A. Atwood. *December.* New boiler set up and repairs made at straw factory of L. R. Bates.

**West Boylston.** In March, Holbrook Mills (F. H. Rice & Co.), cottons, sold to Metropolitan Water Board; in April, spinning room shut down permanently; in June, balance of mill shut down permanently. *August.* Clarendon Mills, cottons, shut down for three weeks. *December.* Reed & Lowe succeeded Joseph L. Howe, boxes. — Howe, Morton, & Lovell, shoes, shut down permanently, plant having been taken by Metropolitan Water Board.

**West Brookfield.** In January, McIntosh & Co., shoes, shut down for inventory and repairs; in May, ran on summer time; in December, shut down for stock taking. *May.* Olmstead-Quaboag Corset Co. shut down few days for repairs; in August, shut down for additional repairs. *October.* Brigham Milk Co. established manufacture of condensed milk.

**Westfield.** In January, William T. Sherman and A. H. Demond began manufacture of ash sifters, a joint invention. — Crane Bros., paper, ran nights to fill orders; in June, ran overtime on government orders. *March.* J. E. Brown Co., comfortables, decided to move from Holyoke to this town. — Arrangements made for removal of industry from West Stafford, Conn., to this place, to manufacture cotton thread and yarn under style of Westfield Manufacturing Co.; in April, company incorporated with capital stock of \$10,000; in May, manufacturing begun. *April.* Cargill, Cook, & Co., whips, enlarged plant. — Foster Machine Co. reduced force. — Geo. L. Laffin, paper manufacturer, died, aged 71 years. *June.* Cook & Parker, whips, shut down permanently. *July.* Price combination existing between local whip manufacturers dissolved. — Johnson & Son, church organ builders, after 50 years of continuous business, closed plant and offered it for sale. *August.* Cowles, Sperry, & Co. established to manufacture whips. — F. D. Loomis & Son, whip buttons, sold to United States Whip Co. — Building occupied by the Whipple branch of the U. S. Whip Co., Independent Whip Co., and Vitrified Wheel Co. damaged by fire. *September.* Wm. Warren Thread Works completed repairs; new boiler set up, 6 automatic dressers and 12 tubing machines added, improvements made in water service, and an addition built to dyehouse. *October.* Lozier Manufacturing Co., bicycles, removed portion of plant from Thompsonville, Conn., to this place; in December, new office building begun, 40 x 50 feet. *November.* Searle Whip Co. sold its machinery to Pomeroy & Van Deusen; in future the company will have its whips made in outside factories, doing only the finishing, labeling, and shipping at old warehouses.

**Westford.** In October, Abbott & Co., woollens, shut down.

**Westhampton.** In May, repairs made on Davis paper mill preparatory to starting up.

**Westminster.** Battles & Dawley succeeded J. L. Boardman, saw and grist mill.

**West Newbury.** In May, S. C. Noyes & Co., combs, shut down for one week; in July, suspended few days for vacation; in August, abolished nickeling department; in October,

suspended temporarily. *December.* W. B. Chaplin, shoes, started up after a shutdown of four weeks.

**West Springfield.** In June, Mittineague Paper Co. made improvements in machinery; in August, shut down two weeks for repairs. *August.* Agawam Paper Co. shut down two weeks for repairs.

**Weston.** In December, Hastings Organ Works ran nights and Sundays.

**Westport.** In December, Galusha Bros. set up their steam sawmill and began operations.

**Weymouth.** In January, Thomas Evans retired from firm of T. J. Evans & Co., shoes; business continued by Bates & Slattery under same style. — Dominic A. Hart of J. W. Hart & Co., shoes, died; in June, business of firm purchased by Geo. H. Bicknell. *February.* John M. Carroll & Sons, shoes, dissolved. — Cook, Sterling, & Co., shoes, discontinued. *March.* E. H. Stetson & Co., shoes, decided to make addition to factory. *May.* Shoe-string factory of Sidney Greenwood destroyed by fire. *June.* T. J. Evans & Co. moved into new factory. — Factory of S. F. Moody, leather belting, destroyed by fire. *July.* Richard A. Hunt, retired shoe manufacturer, died, aged 80 years. *September.* Plant of Bradley Fertilizer Co. destroyed by fire. — Lasters at factories of Gordon-Kiley Co. and Torrey, Curtis, & Tirrell struck against machines. — Sargent Bros. succeeded Geo. H. Shaw. *November.* Shoe factory of Edwin Clapp damaged by fire. — H. B. Reed, shoes, moved to New Hampshire.

**Whitman.** In April, David B. Gurney, tacks, installed new engine. *May.* Commonwealth Shoe & Leather Co. received government orders; in July, increased force and machinery; in October, reduced force; in November, shut down for stock taking. *July.* Old Colony Boot & Shoe Co. received government orders; in August, lasters struck because of dissatisfaction with price list. — L. C. Bliss & Co., shoes, shut down one week for vacation. *September.* Lasters employed in all the shoe factories struck against the machines; pending settlement, work resumed by hand; in October, strike declared off. *October.* United States Shoes & Leather Co. shut down for stock taking. *December.* Fire damaged mill of B. S. Atwood. — Thos. A. Cushman moved from Hopkinton to this town.

**Wilbraham.** In March, Collins Manufacturing Co., paper, ran finishing room overtime on account of rush of orders; in July, shut down all departments except finishing room, on account of lack of orders.

**Williamsburg.** In May, Hampshire Pearl Button Co. shut down preparatory to removing business to Amsterdam, N. Y. *August.* Company formed to operate the Haydenville brass works; in November, started up by assignees of old company and for the benefit of new company.

**Williamstown.** In April, Williamstown Manufacturing Co., cottons, set up new engine; in May, reduced wages; in August, shut down two weeks for repairs. — Boston Finishing Works suspended on account of depression in business; in November, resumed operations. *December.* Carriage shop of Amos Belding destroyed by fire. — Walker, Rand, & Son, succeeded to estate of Mathew Owen, brick.

**Winchendon.** In January, G. N. Goodspeed, machinery manufacturer, died; business run by administrator; in November, property sold at auction. — W. L. Murdock & Son, wooden goods, completed new addition to plant. *October.* Wm. Montgomery, carriages, died; in December, business sold. — Winchendon Spool & Bobbin Co. succeeded to business of H. C. Taft.

**Winchester.** In January, foundation completed for new currying shop for Beggs & Cobb, tanners. *February.* Company incorporated to manufacture paper novelties; capital stock, \$300,000.

**Winthrop.** C. M. Kimball, polishes, removed from Boston to this town.

**WOBURN.** In February, Martin Hayward, retired spice manufacturer, died, aged 84 years. — Waterproof factory of N. Boynton, destroyed by fire in December, 1897, rebuilt; destroyed second time; to be rebuilt. *March.* John Bacon, retired leather manufacturer, died. *April.* F. C. Healy, currier, burned out; business closed until November. *May.* Plant of Fremont S. Bassett & Co., machinery, damaged by fire.

*June.* Woburn Heel Co. succeeded Nathan W. Eaton & Co. — Leather factory of J. B. Murray & Co. destroyed by fire; removed to Milford, N. H. — Rendering works of Benjamin H. Nichols destroyed by explosion and fire. *August.* Woburn Light, Heat, & Power Co. built new power house. — Edward Gallagher, manufacturer of counters heels, etc., died. — Female employes of Russell Counter Co. struck because of reduction in wages; factory shut down in consequence; later settled, and strikers returned. *October.* John I. Munroe, formerly engaged in manufacture of articles from cork, died, aged 58 years. *December.* John Cummings, retired leather manufacturer, died, aged 87 years. — Fowle Bros. & Co., succeeded Fowle Bros. & Clemson.

**WORCESTER.** In January, Parker Ice Tool Co. added the manufacture of ash sifters, invention of A. E. Ayer, to product. — Corriveau & Flagg, leather, succeeded A. J. Corriveau; in November, removed to Chelsea. — Hopeville Manufacturing Co., woollens, began erection of addition to plant; in June, Piedmont Mill damaged by fire; in September, shut down for repairs. — A. H. Brunelle began erection of factory building, of brick, 40 x 50 feet, three stories. — A. H. Loring retired from David Cummings & Co., shoes; in November, fire destroyed cement shed at firm's factory.

*February.* Massachusetts Fuel Co. completed erection of two new manufacturing buildings, 35 x 45 and 35 x 50 feet. — Crompton & Knowles Loom Co. reduced running time. — Norton Emery Wheel Co. ran overtime; in September, made improvements in plant; in October, began erection of two new factory buildings, 50 x 60 feet, three stories, and 50 x 50 feet, two stories.

*March.* W. E. Oakley & Son succeeded to W. E. Oakley and purchased foundry of Luther Shaw & Son.

*April.* H. B. Richards, shoe patterns, retired from business. — Worcester Woollen Mill Co. shut down portion of plant; in July, received government orders and added new looms. — Worcester Weiting Co. resumed business. — Benjamin James, woollen manufacturer, died. — Planing mill of The Charles Baker Co., boxes, damaged by fire. — Beaver Brook Manufacturing Co., satinets, started manufacturing; capital stock, \$10,000. — Geo. W. Prouty Co. closed out permanently.

*May.* J. J. Sawin, grease extractor, died; plant leased by E. N. Dean, heels, who continued it together with his other business. — Logan, Swift, & Brigham; Whitcomb Envelope Co.; and W. H. Hill Envelope Co., absorbed by United States Envelope Co. — Prentice Bros., machinists, began work on new building, 50 x 350 feet, three stories. — Rice, Barton, & Fales Machine & Iron Co. shipped paper machinery to Ireland. — Cabinet factory of John W. Loring & Son damaged by fire.

*June.* Brown & Simpson Co., after running out stock, shut down permanently. — Worcester Brewing Co. completed plant and started up. — James H. Whittle, ash sifters and clothes dryers, built addition to plant. — A. Israel, clothing, made plans for erection of factory for manufacture of underwear; of wood, 50 x 80 feet, three stories. — M. J. Whittall, carpets, resumed full time. — Worcester Carpet Co. (Wm. J. Hogg & Son) reduced to part time, operatives working on relay system; in August, received government contract. — Sullivan Forehand of Forehand Arms Co., died, aged 66 years.

*July.* The Spy Co., publishers, incorporated; capital stock, \$30,000. — Albert Curtis of Curtis & Marble, machinery, died, aged 91 years. — Lasters at shoe factory of Walker & Brown struck because of dissatisfaction with wage scale; settled.

*August.* Henry J. Haas, Jr., succeeded H. W. Jennison & Co. — Chandler Wetherbee, retired cotton manufacturer, died. — Reginald H. Washburn sold plant for manufacture of bicycle nipples to Excelsior Needle Co., Torrington, Conn., and machinery removed to that place. — Factories of George S. Hatch & Co., heels, and Globe Corset Co. damaged by fire.

*September.* Stoneville Worsted Co. shut down for three weeks on account of condition of trade; later, resumed operations; in October, suspended work for two weeks. — Aetna Knitting Co. added new machinery. — Curtis Manufacturing Co., woollens, shut down on account of lack of orders; repairs made. — H. H. Houghton, retired manufacturer and inventor, died, aged 71 years.

*October.* Worcester Lithographing Co. incorporated; capital stock, \$20,000. — Moulders at foundry of Prespey Pero struck; places filled.

*November.* Washburn & Moen Co. ran nights. — Worcester Marble & Granite Co. closed up.

*December.* Holyoke Machine Co. awarded contract for two water wheels for Thordike Co.'s new mills at Warren. — New Sherman Envelope Co. began operations. — Adriatic Woollen Mills shut down owing to dull trade. — American Card Clothing Co. established warerooms and repair shop at Charlotte, N. C. — The Baker-Ricketson

lumber mill and the Howard Bros.' card clothing factory damaged by fire. — Amos Nichols, retired shoe manufacturer, died, aged 85 years. — Whitcomb & Miles, shoes, discontinued manufacturing; no successor. — Among the other business changes during the year were the following: Louis W. Rawson succeeded Rawson Manufacturing Co., bicycles; J. E. Wesson succeeded J. E. Wesson Shoe Co.; Williams & Bridges succeeded Williams Brothers, boxes; Gilman Carriage Works succeeded to the estate of A. L. Gilman; Loughlin & Crowley succeeded to Burns & Loughlin, monumental work; The T. H. Buckley Lunch Wagon Manufacturing and Catering Co. succeeded Thos. H. Buckley; Douglas Mills, cottons, operated in Worcester two months, then moved to Rhode Island; Worcester Steam Heating Co. closed business; no successor.

**Wrentham.** In May John L. Thompson secured quarters for establishment of jewelry factory. *June.* Plant of Lincoln, Bacon, & Co., jewelry, sold to new firm of Scofield, Melcher, & Scofield. *November.* Geo. A. Gardiner, jewelry, sold his plant to George Demarest. *December.* Maintien Bros. & Elliot, jewelry, ran nights.

**THE STATE.** The preceding chronology has been prepared from information supplied by manufacturers, and from other sources. It includes the more important items of interest connected with the manufacturing and mechanical industries of the Commonwealth.

Returns are made from 215 cities and towns, as against 228 cities and towns reported in the volume for 1897 and in the following table a summary of the principal industrial facts are shown, placed in comparison with like items contained in the Chronology for 1897:

CLASSIFICATION OF CHANGES, SUSPENSIONS, FIRES, ETC.	NUMBER OF ESTABLISHMENTS REPORTING SPECIFIED CHANGES, SUSPENSIONS, FIRES, ETC.	
	1897	1898
Firms, establishments, and industries new to towns, . . . . .	144	90
Buildings constructed during the year, . . . . .	104	23
Machinery added to plants, . . . . .	125	175
Other additions to plants, . . . . .	74	117
Addition of new class of product to manufacture, . . . . .	17	16
New industrial corporations organized, . . . . .	60	52
Amount of capital stock of new industrial corporations, . . . . .	\$20,435,600	\$5,510,700
Rebuilding of burned factories, etc., . . . . .	16	10
Removals to larger or new quarters, . . . . .	65	31
Resumption of business after protracted shutdowns, . . . . .	16	57
Changes from private firms to corporations, . . . . .	11	45
Changes in firms, firm names, etc., . . . . .	91	224
Changes in character of product, . . . . .	5	3
Changes in character of machinery, . . . . .	4	1
Consolidation of firms and corporations, . . . . .	9	21
Increases in capital stock, . . . . .	4	8
Decreases in capital stock, . . . . .	1	4
Removals of firms and industries to Massachusetts from other States, . . . . .	5	5
Removals of firms and industries from Massachusetts to other States, . . . . .	13	18
Removals from one town to another in Massachusetts, . . . . .	37	34
Increase in number of employes, . . . . .	28	29
Reduction in number of employes, . . . . .	19	27
Increase in rate of wages paid, . . . . .	12	6
Reduction in rate of wages paid, . . . . .	46	52

CLASSIFICATION OF CHANGES, SUSPENSIONS, FIRES, ETC.	NUMBER OF ESTABLISHMENTS REPORTING SPECIFIED CHANGES, SUSPENSIONS, FIRES, ETC.	
	1897	1898
Increase in hours of labor per day or week, . . . . .	46	1
Reduction in hours of labor per day or week, . . . . .	42	3
Running overtime and nights on account of rush of orders, . . . . .	88	104
Introduction of electric lighting and power into factories, etc., . . . . .	11	10
Running short time, . . . . .	-	53
Suspensions for vacations, . . . . .	8	11
Suspensions for stock taking, . . . . .	26	32
Suspensions indefinite as to duration, . . . . .	32	55
Suspensions on account of low water, . . . . .	-	1
Suspensions on account of high water, . . . . .	7	1
Suspensions on account of accidents to machinery, . . . . .	10	8
Suspensions on account of repairs and improvements, . . . . .	57	46
Suspensions for curtailment of production, . . . . .	20	22
Suspensions on account of dull trade, . . . . .	19	27
Suspensions on account of retirement from business (no successors), . . . . .	5	40
Suspensions on account of dissolution of private firms and corporations, . . . . .	5	6
Suspensions (cause not given), . . . . .	93	83
Strikes, . . . . .	149	131
Establishment of "free shops," . . . . .	7	4
Auction sales of industries or plants, . . . . .	8	10
Sales of plants in whole or in part, . . . . .	44	19
Sales of plants to syndicates or trusts, . . . . .	-	12
Fires during the year, . . . . .	149	172
Plants damaged by explosions, . . . . .	5	8
Deaths of manufacturers, . . . . .	97	120

In 1898, there were reported 90 instances of new firms, establishments, and industries as being established for the first time in the cities and towns under consideration, as against 144 instances reported in 1897. There were 23 instances of new buildings erected in 1898, and 117 of additions to plant. While there were 52 new industrial corporations organized in 1898 as against 60 in 1897, the authorized capital stock was nearly fifteen million dollars less. There were 45 changes from private firms to corporations reported, 12 instances of the sale of plants to syndicates or trusts, and 21 instances of the consolidation of firms and corporations. Five establishments moved into Massachusetts from other States and 18 moved out of the State, while 34 establishments changed from one town to another within the State boundaries. There were 29 instances of reported increase in the number of persons employed against 27 noting a decrease; six reporting an increase in the rate of wages paid, and 52 a reduction of the rate of wages. One instance is reported of the increase in hours of labor, three of reduction in the hours of labor, and 104 instances of running overtime and nights on account of the rush of orders; among the latter were 14 instances of overtime work caused by "government orders" on account of the Spanish-American war. In this connection we note 53 instances of running on short time which, of course,

is equivalent to a reduction in hours, and 55 suspensions indefinite as to duration. The other lines in the table may be read in a similar manner.

The following table shows, by months, the number of suspensions, as reported in the preceding table, for the year 1898 :

MONTHS.	CAUSES OF SUSPENSION					
	Vacations	Stock Taking	Indefinite	Low Water	High Water	Accidents
January, . . . . .	-	10	10	-	-	1
February, . . . . .	-	-	4	-	1	-
March, . . . . .	-	-	2	-	-	-
April, . . . . .	-	-	5	-	-	-
May, . . . . .	-	2	3	-	-	-
June, . . . . .	3	2	4	-	-	1
July, . . . . .	5	3	3	1	-	-
August, . . . . .	1	2	3	-	-	-
September, . . . . .	-	1	6	-	-	-
October, . . . . .	-	2	6	-	-	3
November, . . . . .	-	2	6	-	-	2
December, . . . . .	2	8	3	-	-	1
TOTALS, . . . . .	11	32	55	1	1	8

MONTHS.	CAUSES OF SUSPENSION—Con.						
	Repairs and Improvements	Curtailment	Dull Trade	Retirements	Dissolutions	Not Given	TOTALS
January, . . . . .	4	-	-	6	-	12	43
February, . . . . .	1	-	1	3	1	3	14
March, . . . . .	-	1	-	3	-	-	6
April, . . . . .	3	3	4	-	-	12	27
May, . . . . .	10	3	4	5	1	9	37
June, . . . . .	3	1	2	2	1	8	27
July, . . . . .	5	2	4	3	2	8	36
August, . . . . .	11	6	3	5	1	10	42
September, . . . . .	6	2	4	2	-	2	23
October, . . . . .	1	3	4	5	-	7	31
November, . . . . .	-	1	-	2	-	7	20
December, . . . . .	2	-	1	4	-	5	26
TOTALS, . . . . .	46	22	27	40	6	83	332

The 172 fires reported in 1898 occurred in the months as specified in the following table, and are placed in comparison with the 149 fires which occurred during the same months in 1897 :

MONTHS.	NUMBER OF FIRES		MONTHS.	NUMBER OF FIRES	
	1897	1898		1897	1898
January, . . . .	16	7	July, . . . . .	7	13
February, . . . .	11	12	August, . . . . .	9	15
March, . . . . .	13	12	September, . . . .	7	6
April, . . . . .	15	13	October, . . . . .	11	14
May, . . . . .	16	37	November, . . . .	10	11
June, . . . . .	10	15	December, . . . .	24	17











